



# **STIC Search Report**

**EIC 1700**

**STIC Database Tracking Number: 157310**

**TO: Camie Thompson**  
**Location: REM 10D28**  
**Art Unit : 1774**  
**July 8, 2005**

**Case Serial Number: 10/779875**

**From: Les Henderson**  
**Location: EIC 1700**  
**REM 4B28 / 4A30**  
**Phone: 571-272-2538**

**Leslie.henderson@uspto.gov**

## **Search Notes**



# STIC Search Results Feedback Form

**EIC17000**

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader  
571/272-2505 REMSEN 4B28

## Voluntary Results Feedback Form

- I am an examiner in Workgroup:  Example: 1713
- Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Carmie Thompson Examiner #: 79244 Date: 6/21/05  
 Art Unit: 1774 Phone Number 30 571-272-1530 Serial Number: 10/179,885  
 Mail Box and Bldg/Room Location: 10 D 28 Results Format Preferred (circle): PAPER DISK E-MAIL  
lem

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.

Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic electroluminescent device

Inventors (please provide full names): Jeong Dae Seop; Hee Jung Kim; Kyung Hoon Lee;  
Myung Seop Kim; Chun Gun Park

Earliest Priority Filing Date: 2/19/03

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please do a search on Claims 1-7  
 including compounds

SCIENTIFIC REFERENCE BR  
 Sci & Tech Inf. Ctr.

JUN 23 2005

Pat. & T.M. Office

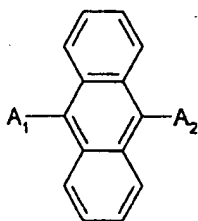
## STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
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Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>7</u>	Questel/Orbit _____
Date Searcher Picked Up: <u>7/6/05</u>	Bibliographic _____	Dr.Link _____
Date Completed: <u>7/8/05</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>30</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>475</u>	Other _____	Other (specify) _____

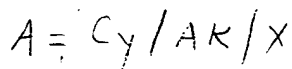
**What is claimed is:**

1. An organic electroluminescent device, comprising:  
a substrate;  
a first and second electrodes formed on the substrate;  
a light-emitting layer formed between the first electrode and the second electrode; and  
a hole-blocking layer formed between the light-emitting layer and the second electrode  
and using a material of a chemical formula 1.

[Chemical formula]

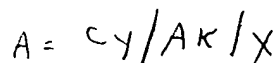


Wherein, at least one of A<sub>1</sub> and A<sub>2</sub> is selected from a substituted or non-substituted aromatic group, a heterocyclic group, an aliphatic group, halogen, and hydrogen.



2. The organic electroluminescent device of claim 1, wherein structures of A<sub>1</sub> and A<sub>2</sub> are the same or different each other.

3. The organic electroluminescent device of claim 1, wherein at least one of A<sub>1</sub> and A<sub>2</sub> is selected from phenyl, biphenyl, pyridyl, naphthyl, quinolyl, isoquinolyl, fluorenyl, terphenyl, methyl, ethyl, propyl, isopropyl, and halogen groups.



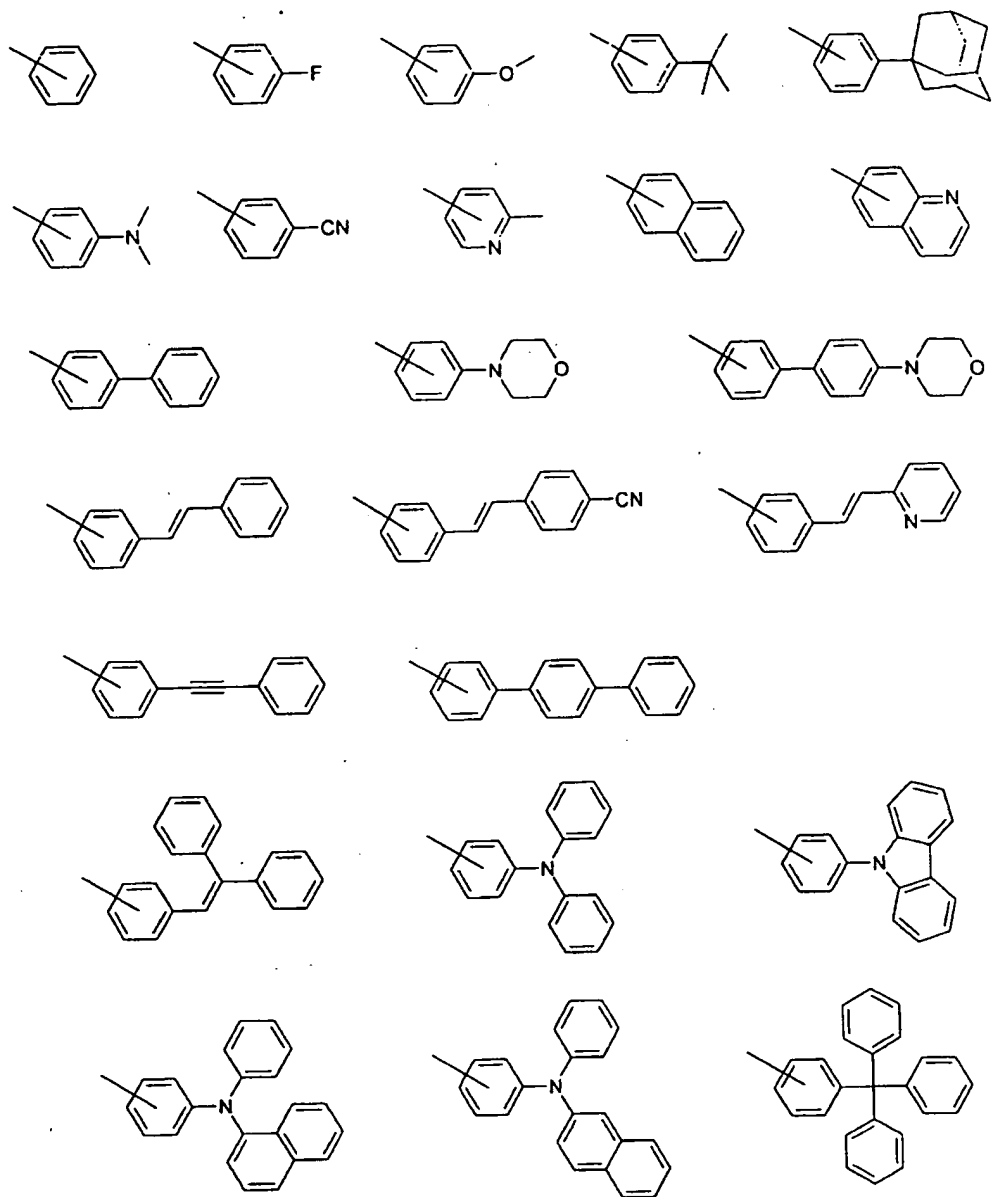


4. The organic electroluminescent device of claim 3, wherein a substitute of the A<sub>1</sub> and A<sub>2</sub> is at least one selected from aryl, alkyl, aryloxy, alkoxy, arylamino, alkylamino, hydroxyl, amino, halogen and cyano group.

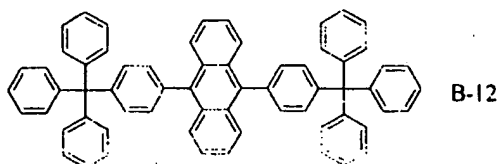
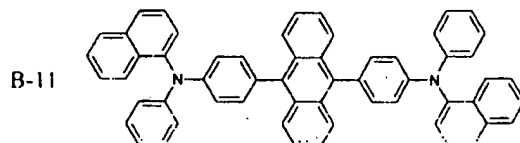
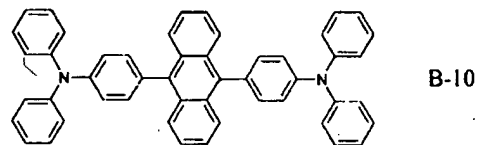
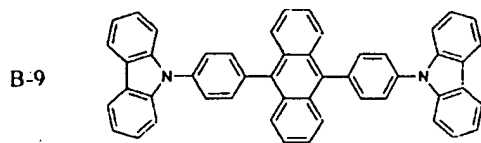
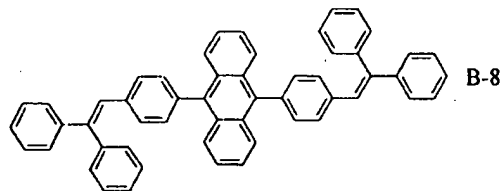
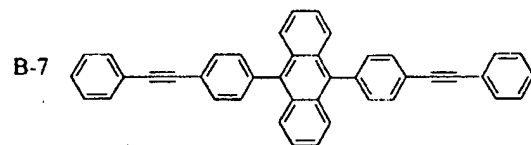
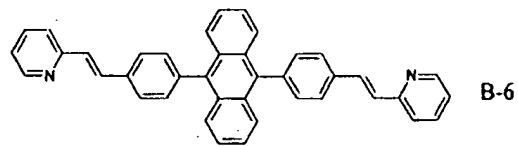
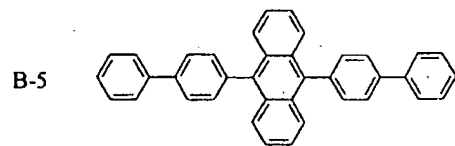
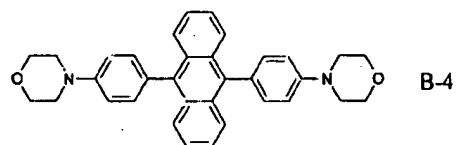
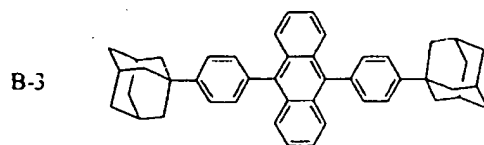
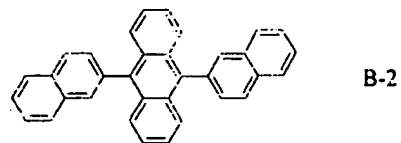
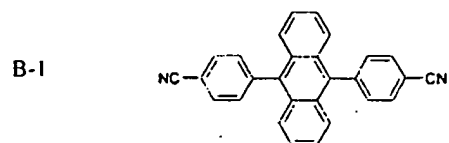
$A = Cb/Ak/O/N/X/CN$

5. The organic electroluminescent device of claim 4, wherein a substitute of the A<sub>1</sub> and A<sub>2</sub> is at least one selected from phenyl, biphenyl, triphenyl, phenylethenyl, diphenylethenyl, phenylethynyl, phenoxy, tolyoxy, vinyl, methyl, ethyl, propyl, isopropyl, t-butyl, cyclohexyl, diphenylamino, carbazolyl, morpholinyl, methoxy, ethoxy, propoxy, butoxy, dimethylamino, diphenylamino, fluorine and chlorine group.

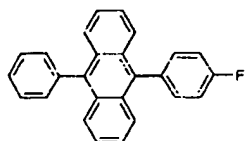
6. The organic electroluminescent device of claim 1, wherein at least one of the A<sub>1</sub> and A<sub>2</sub> is one of the following chemical formulas 2.



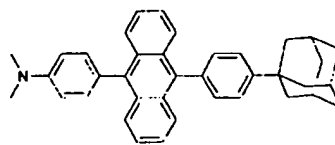
7. The organic electroluminescent device of claim 1, wherein a material of the hole-blocking layer is one of the following chemical formulas 3.



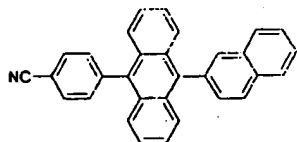
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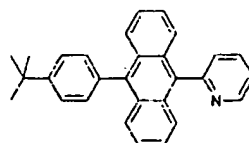
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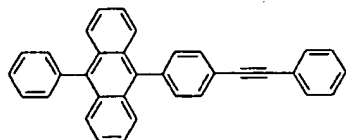
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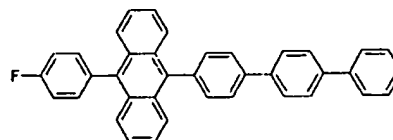
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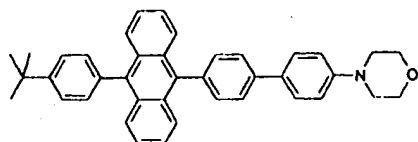
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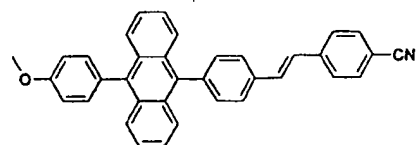
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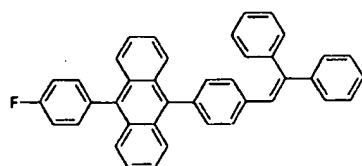
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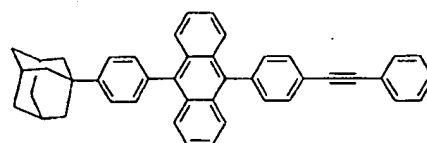
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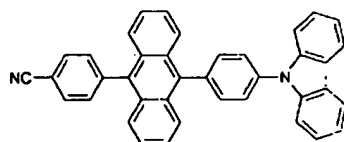
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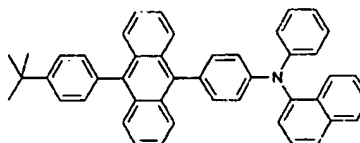
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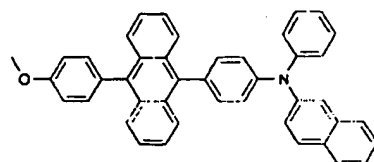
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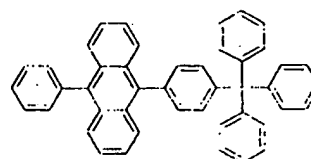
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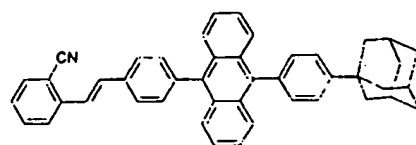
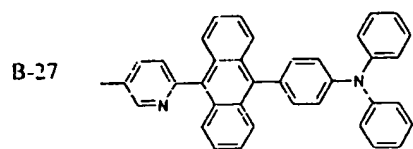


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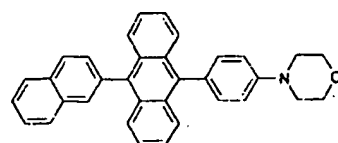
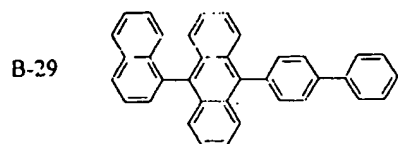


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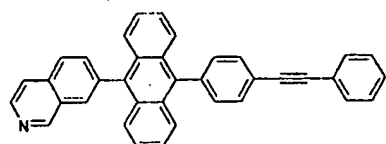
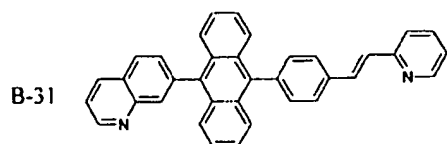




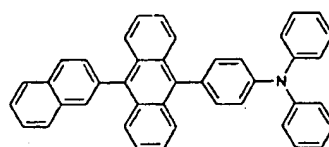
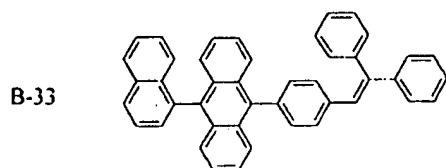
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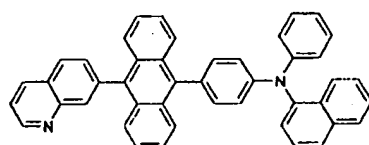
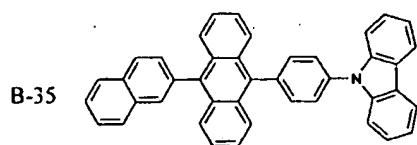
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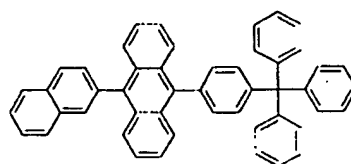
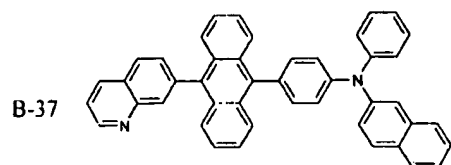
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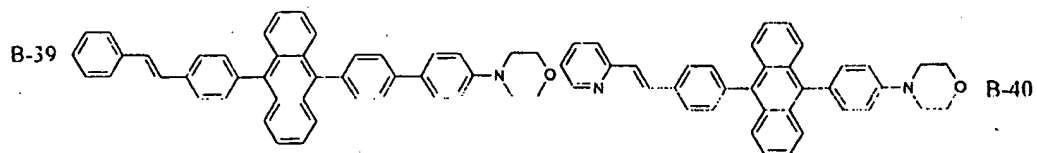
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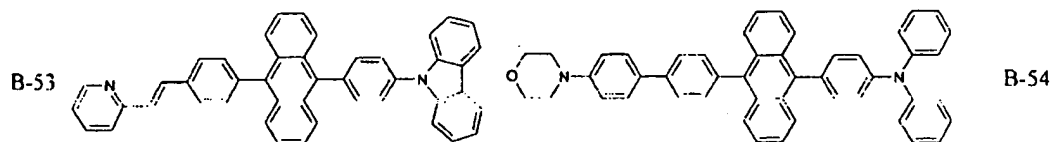
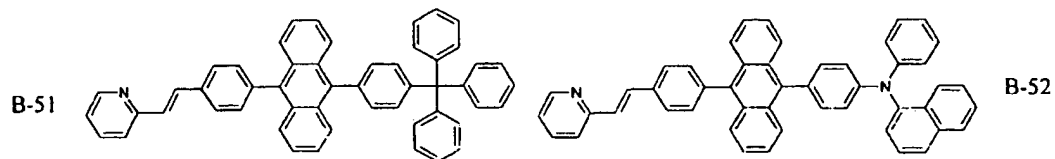
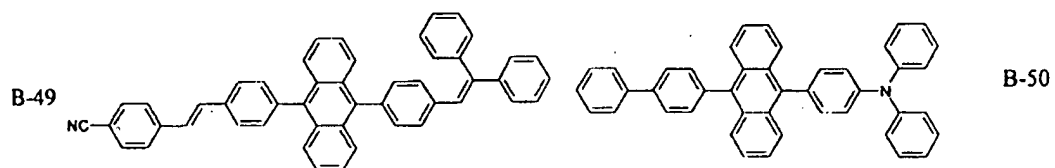
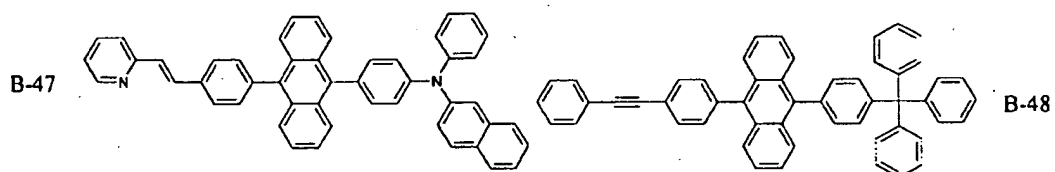
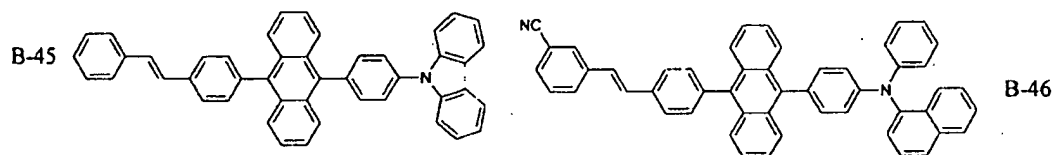
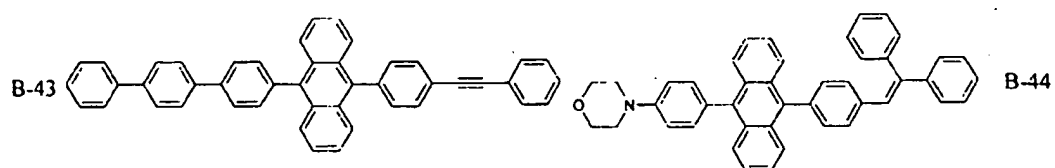
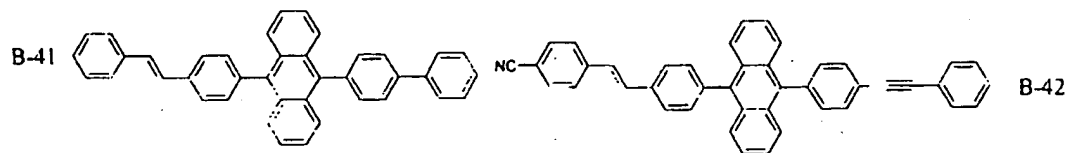
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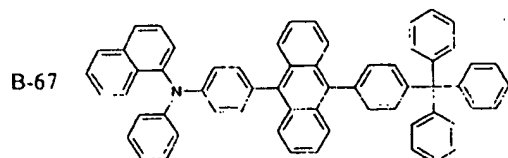
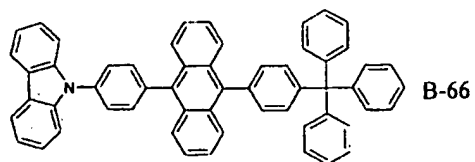
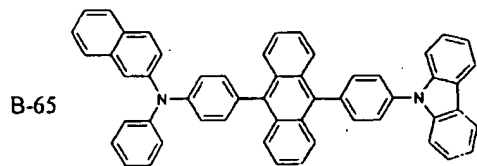
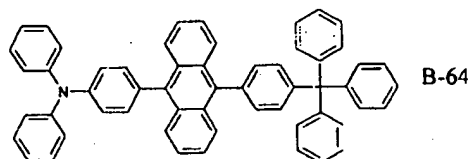
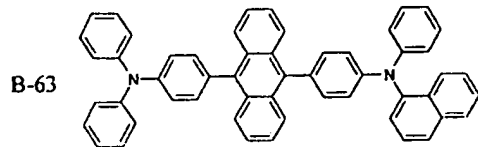
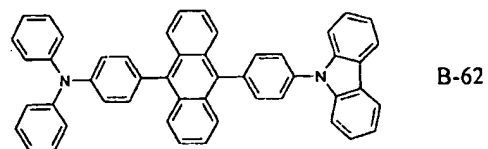
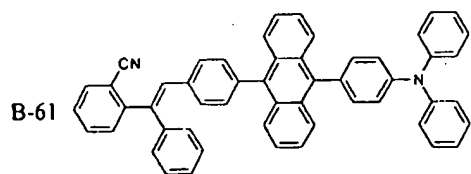
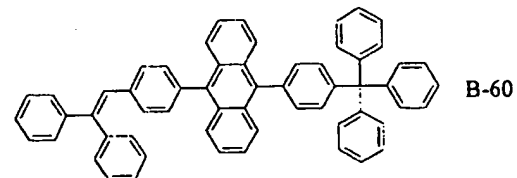
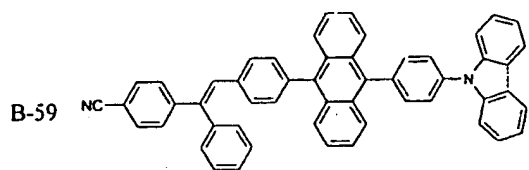
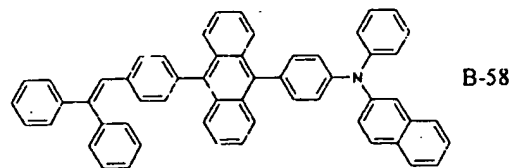
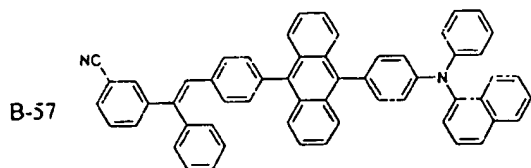
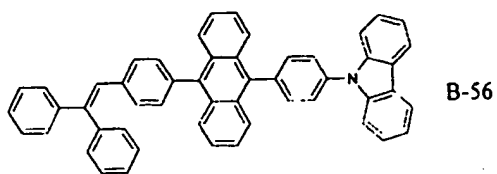
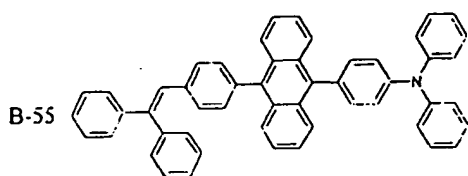


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L7 78852 SEA ABB=ON PLU=ON 638.8/RID  
L8 41 SEA ABB=ON PLU=ON L6 AND L7 AND 46.150.18/RID  
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L10 105727 SEA ABB=ON PLU=ON ELECTROLUMIN? OR ORGANOLUMIN? OR  
(ELECTRO OR ORGANO OR ORG#) (2A) LUMIN? OR LIGHT? (2A) (EMIT?  
OR EMISSION?) OR EL OR E(W)L OR OLED OR L(W)E(W)D OR  
LED/IT  
L11 7 SEA ABB=ON PLU=ON L9 AND L10  
D L11 1-7 HITSTR

FILE 'REGISTRY' ENTERED AT 09:17:35 ON 08 JUL 2005

E 741255-97-0/RN



L12 1 SEA ABB=ON PLU=ON 741255-97-0/RN  
D SCAN  
D RSD  
E 1839.22.20/RID  
L13 34214 SEA ABB=ON PLU=ON 1839.22.20/RID  
L14 101 SEA ABB=ON PLU=ON L6 AND L13 AND (46.150.18/RID OR  
46.156.30/RID)  
  
FILE 'HCAPLUS' ENTERED AT 09:23:15 ON 08 JUL 2005  
L15 68 SEA ABB=ON PLU=ON L14  
L16 31 SEA ABB=ON PLU=ON L15 AND L10  
D L16 1-10 HITSTR  
  
FILE 'LREGISTRY' ENTERED AT 09:24:52 ON 08 JUL 2005  
L17 STR  
  
FILE 'REGISTRY' ENTERED AT 09:26:08 ON 08 JUL 2005  
L18 50 SEA SSS SAM L17  
L19 26439 SEA SSS FUL L17  
SAV L19 THO8752/A  
  
FILE 'LREGISTRY' ENTERED AT 09:29:33 ON 08 JUL 2005  
L20 STR 741255-63-0  
  
FILE 'REGISTRY' ENTERED AT 09:30:47 ON 08 JUL 2005  
L21 0 SEA ABB=ON PLU=ON L19 AND L12  
L22 0 SEA ABB=ON PLU=ON L19 AND L3  
  
FILE 'LREGISTRY' ENTERED AT 09:32:04 ON 08 JUL 2005  
D QUE STAT  
  
FILE 'REGISTRY' ENTERED AT 09:37:08 ON 08 JUL 2005  
D QUE STAT  
D SCAN L3  
  
FILE 'LREGISTRY' ENTERED AT 09:37:38 ON 08 JUL 2005  
L23 STR  
  
FILE 'REGISTRY' ENTERED AT 09:38:18 ON 08 JUL 2005  
L24 50 SEA SSS SAM L23  
  
FILE 'LREGISTRY' ENTERED AT 09:41:09 ON 08 JUL 2005  
L25 STR L23  
  
FILE 'REGISTRY' ENTERED AT 09:41:44 ON 08 JUL 2005  
L26 50 SEA SSS SAM L25  
L27 34863 SEA SSS FUL L25  
SAV TEMP L27 THO8752A/A  
L28 1 SEA ABB=ON PLU=ON L27 AND L3  
D SCAN  
D QUE STAT L17  
L29 50 SEA SUB=L27 SSS SAM L17  
L30 22964 SEA SUB=L27 SSS FUL L17  
SAV TEMP L30 THO8752B/A  
L31 0 SEA ABB=ON PLU=ON L3 AND L30  
  
FILE 'LREGISTRY' ENTERED AT 09:47:42 ON 08 JUL 2005  
L32 STR L17  
  
FILE 'REGISTRY' ENTERED AT 09:48:18 ON 08 JUL 2005  
L33 50 SEA SUB=L27 SSS SAM L32  
L34 6107 SEA SUB=L27 SSS FUL L32  
SAV L34 THO8752C/A  
D SAV  
L35 1 SEA ABB=ON PLU=ON L34 AND L3  
L36 1 SEA ABB=ON PLU=ON L34 AND L12

L37 D SCAN  
14 SEA ABB=ON PLU=ON L34 AND L8  
D SCAN  
L38 48 SEA ABB=ON PLU=ON L34 AND L14

FILE 'HCAPLUS' ENTERED AT 09:55:09 ON 08 JUL 2005

L39 6 SEA ABB=ON PLU=ON L37  
L40 31 SEA ABB=ON PLU=ON L38  
D SCAN L39 TI  
D SCAN L40 TI  
L41 3 SEA ABB=ON PLU=ON L39 AND 10  
D SCAN  
D L41 1-3 HITSTR  
D SCAN L39  
L42 3 SEA ABB=ON PLU=ON L39 NOT L41  
D SCAN  
L43 QUE ABB=ON PLU=ON EL OR E(W)L OR L(W)E(W)D OR OLED OR  
ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR  
ORG#) (2A) LUM!N? OR LIGHT? (2A) (EMIT? OR EMISSION? OR  
SOURCE?)  
L44 QUE ABB=ON PLU=ON (LUMINES##### OR FLUORES? OR  
PHOSPHORES?)/BI,AB OR LED/IT OR PHOSPHOR# OR LUMIN?  
D QUE L43  
D QUE L44  
L45 6 SEA ABB=ON PLU=ON L39 AND L43  
L46 4 SEA ABB=ON PLU=ON L39 AND L44  
L47 6 SEA ABB=ON PLU=ON L45 OR L46  
L48 7 SEA ABB=ON PLU=ON L9 AND L43  
L49 9 SEA ABB=ON PLU=ON L9 AND L44  
D SCAN  
L50 4 SEA ABB=ON PLU=ON L49 NOT L48  
D SCAN  
D L50 1-4 KWIC  
L51 31 SEA ABB=ON PLU=ON L15 AND L43  
D L51 1-5 HITSTR

FILE 'REGISTRY' ENTERED AT 10:28:34 ON 08 JUL 2005  
ACTIVATE THO875E/A

-----  
L52 STR  
L53 ( 96106) SEA SSS FUL L52  
L54 STR  
L55 78 SEA SUB=L53 SSS FUL L54  
-----  
D QUE STAT  
D QUE STAT L54

FILE 'LREGISTRY' ENTERED AT 10:29:52 ON 08 JUL 2005  
L56 STR L54

FILE 'REGISTRY' ENTERED AT 10:52:58 ON 08 JUL 2005  
D QUE STAT L27  
L57 50 SEA SUB=L27 SSS SAM L56  
D QUE STAT

FILE 'LREGISTRY' ENTERED AT 10:56:48 ON 08 JUL 2005  
L58 STR L56

FILE 'REGISTRY' ENTERED AT 10:58:19 ON 08 JUL 2005  
L59 50 SEA SUB=L27 SSS SAM L58  
D QUE STAT  
L60 1759 SEA SUB=L27 SSS FUL L58  
SAV L60 THO8752D/A

FILE 'HCAPLUS' ENTERED AT 11:01:51 ON 08 JUL 2005

FILE 'REGISTRY' ENTERED AT 11:01:56 ON 08 JUL 2005

FILE 'HCAPLUS' ENTERED AT 11:02:34 ON 08 JUL 2005  
L61 507 SEA ABB=ON PLU=ON L60  
L62 255 SEA ABB=ON PLU=ON L61 AND (L10 OR L43)  
D L62 1-20 HITSTR

FILE 'REGISTRY' ENTERED AT 11:08:44 ON 08 JUL 2005  
L63 1 SEA ABB=ON PLU=ON L3 AND L60  
D SCAN  
L64 1 SEA ABB=ON PLU=ON L12 AND L60  
D SCAN

FILE 'LREGISTRY' ENTERED AT 11:11:11 ON 08 JUL 2005  
L65 STR L58

FILE 'REGISTRY' ENTERED AT 11:14:01 ON 08 JUL 2005  
L66 11 SEA SUB=L27 SSS SAM L65  
D SCAN  
L67 156 SEA SUB=L27 SSS FUL L65  
DIS

FILE 'HCAPLUS' ENTERED AT 11:17:50 ON 08 JUL 2005  
L68 69 SEA ABB=ON PLU=ON L67  
L69 65 SEA ABB=ON PLU=ON L68 AND (L10 OR L43)  
D L69 1-5 HITSTR  
D L69 11-15 HITSTR

FILE 'LREGISTRY' ENTERED AT 11:20:27 ON 08 JUL 2005  
L70 STR L58

FILE 'REGISTRY' ENTERED AT 11:23:26 ON 08 JUL 2005  
L71 0 SEA SUB=L27 SSS SAM L70

FILE 'LREGISTRY' ENTERED AT 11:24:09 ON 08 JUL 2005  
L72 STR L70  
D QUE STAT

FILE 'REGISTRY' ENTERED AT 11:26:16 ON 08 JUL 2005  
L73 0 SEA SUB=L27 SSS SAM L72  
L74 10 SEA SUB=L27 SSS FUL L72  
D SCAN

FILE 'LREGISTRY' ENTERED AT 11:27:58 ON 08 JUL 2005  
L75 STR L72

FILE 'REGISTRY' ENTERED AT 11:29:44 ON 08 JUL 2005  
L76 18 SEA SUB=L27 SSS SAM L75  
D SCAN

FILE 'LREGISTRY' ENTERED AT 11:33:10 ON 08 JUL 2005  
L77 STR L75

FILE 'REGISTRY' ENTERED AT 11:36:45 ON 08 JUL 2005  
L78 11 SEA SUB=L27 SSS SAM L77  
D SCAN  
L79 179 SEA SUB=L27 SSS FUL L77  
SAV L67 THO8752E/A  
SAV L74 THO8752F/A  
SAV L79 THO8752G/A

FILE 'HCAPLUS' ENTERED AT 11:41:36 ON 08 JUL 2005  
L80 69 SEA ABB=ON PLU=ON L67  
L81 5 SEA ABB=ON PLU=ON L74  
L82 61 SEA ABB=ON PLU=ON L79  
L83 65 SEA ABB=ON PLU=ON L80 AND (L10 OR L43)

```

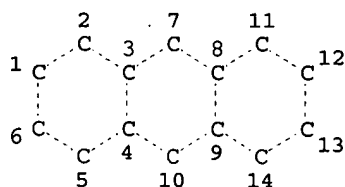
L84      5 SEA ABB=ON  PLU=ON  L81 AND (L10 OR L43)
L85     54 SEA ABB=ON  PLU=ON  L82 AND (L10 OR L43)
L86     36 SEA ABB=ON  PLU=ON  L11 OR L16 OR L45 OR L48 OR L51
        D L86 1-5 HITSTR
        D QUE STAT L84
        D SCAN L84
        D L84 1-5 HITSTR
L87     39 SEA ABB=ON  PLU=ON  L86 OR L84
L88    110 SEA ABB=ON  PLU=ON  L69 OR L83 OR L85
L89   3345991 SEA ABB=ON  PLU=ON  DEVICE? OR CONTRIVANCE? OR INVENTION?
        OR APPARAT? OR APP## OR IMPLEMENT? OR INSTRUMENT? OR
        EQUIP?
L90    108 SEA ABB=ON  PLU=ON  L89 AND L88
L91   851722 SEA ABB=ON  PLU=ON  (ELECTRON# OR E OR HOLE# OR CHARGE#) (
        2A) (TRANSFER? OR TRANSPORT? OR INJECT? OR BLOCK? OR
        MIGRAT? OR MOVE#) OR ET
L92     41 SEA ABB=ON  PLU=ON  L91 AND L90
L93     75 SEA ABB=ON  PLU=ON  L87 OR L92
L94     84 SEA ABB=ON  PLU=ON  L62 AND L89 AND L91
        E LAYER/CT
L95     QUE ABB=ON  PLU=ON  (LIGHT(2A) (EMIT? OR EMISSION?)) AND
        (LAYER? OR SHEET? OR LAMIN?)
L96     45 SEA ABB=ON  PLU=ON  L94 AND L95
L97     20 SEA ABB=ON  PLU=ON  L92 AND L95
L98     QUE ABB=ON  PLU=ON  FIRST OR 1ST OR SECOND OR 2ND
L99      7 SEA ABB=ON  PLU=ON  L98 AND L96
L100     4 SEA ABB=ON  PLU=ON  L98 AND L97
L101    46 SEA ABB=ON  PLU=ON  L96 OR L97
L102     7 SEA ABB=ON  PLU=ON  L99 OR L100
        D L102 1-7 HITSTR
L103    84 SEA ABB=ON  PLU=ON  L87 OR L101
L104    45 SEA ABB=ON  PLU=ON  L87 OR L102
        D L104 1-45 TI
L105    39 SEA ABB=ON  PLU=ON  L103 NOT L104
        D QUE STAT L104

```

```

=> d que stat 125
L25      STR

```



```

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

```

```

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 14

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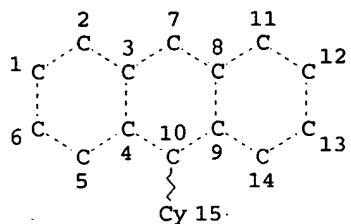
STEREO ATTRIBUTES: NONE

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=> d que stat 132
L32      STR

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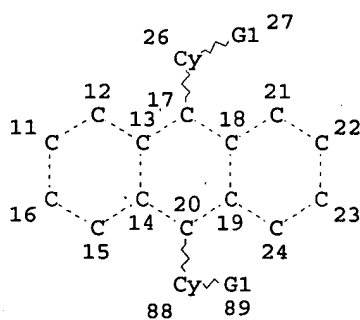
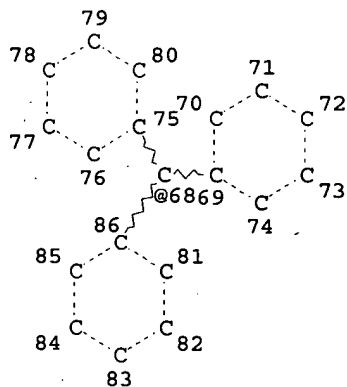
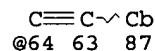
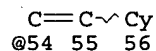
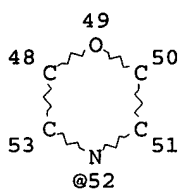
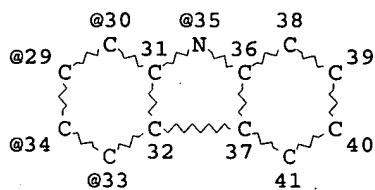
NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

=> d que stat 158

L58 STR



VAR G1=X/O/N/CN/AK/CB/52/54/64/68/35/30/29/34/33

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 26

GGCAT IS UNS AT 56

GGCAT IS UNS AT 87

GGCAT IS UNS AT 88

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS UNLIMITED AT 11 12 13 14 15 16 17 18 19 20 21 22 23 24 29 30  
 31 32 33 34 35 36 37 38 39 40 41 48 49 50 51 52 53 54 55 63 64  
 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86

GRAPH ATTRIBUTES:

RSPEC 29 11

NUMBER OF NODES IS 62

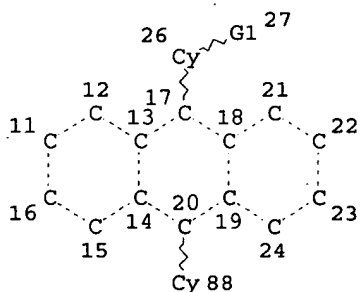
STEREO ATTRIBUTES: NONE

=> d que stat 165

L65 STR

C=C~Cy  
@54 55 56

C≡C~Cb  
@64 63 87



VAR G1=54/64

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 26

GGCAT IS UNS AT 56

GGCAT IS UNS AT 87

GGCAT IS UNS AT 88

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS UNLIMITED AT 11 12 13 14 15 16 17 18 19 20 21 22 23 24 54 55  
63 64

GRAPH ATTRIBUTES:

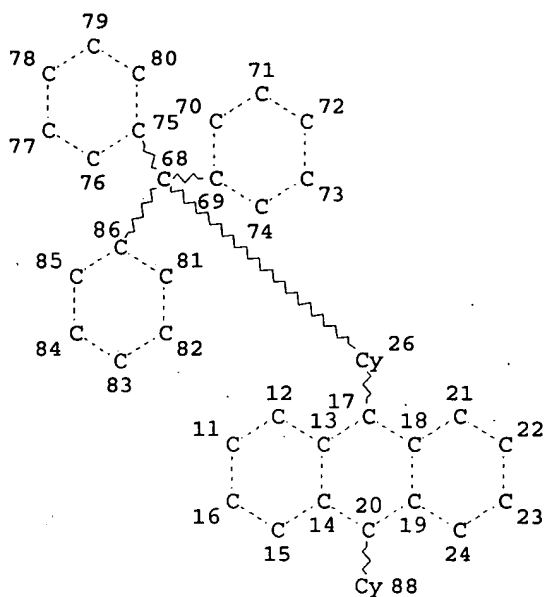
RSPEC 20

NUMBER OF NODES IS 23

STEREO ATTRIBUTES: NONE

=> d que stat 172

L72 STR



## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 26

GGCAT IS UNS AT 88

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS UNLIMITED AT 11 12 13 14 15 16 17 18 19 20 21 22 23 24 68 69  
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86

## GRAPH ATTRIBUTES:

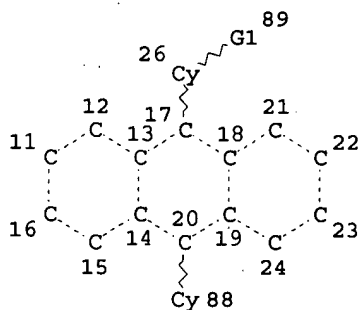
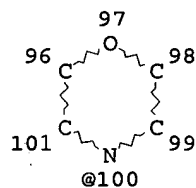
RSPEC 17

NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE

=&gt; d que stat 177

L77 STR

Ak~N~Ak  
90 @91 92Cb~N~Cb  
93 @94 95

VAR G1=91/94/100

## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 26

GGCAT IS UNS AT 88

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS UNLIMITED AT 11 12 13 14 15 16 17 18 19 20 21 22 23 24

## GRAPH ATTRIBUTES:

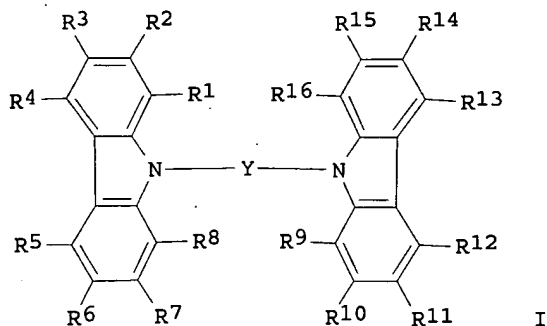
RSPEC 17  
NUMBER OF NODES IS 29

STEREO ATTRIBUTES: NONE

=> => d 1104 1-45 cbib abs hitstr hitind

L104 ANSWER 1 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2005:344276 Document No. 142:400286 Carbazole derivatives used as host material of phosphorescent substance in organic electroluminescent devices. Chiu, Yung; Chiao, Chuan; Wang, Chien-Hua; Wang, Li-Tuo; Tuan, Lien; Lei, Kang-Tieh (Ching-Hua University, Peop. Rep. China; Beijing Wei-Xin-nuo Science and Technology Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2005104971 A2 20050421, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2004-258365 20040906. PRIORITY: CN 2003-156364 20030905.

GI



AB Disclosed is a carbazole derivative, suited for use as a host material of a phosphorescent substance in an organic **electroluminescent** device, characterized in that the glass transition temperature and the lowest excited triplet state energy are 70-220 °C and  $\geq 2.62$  eV, resp., and represented by I [Y = linking group containing alkylene, arylene, and spiro structure; and R1-16 = H, alkyl, alkoxy, etc.].

IT 849820-42-4P 849820-47-9P 849820-48-0P  
849820-49-1P 849820-50-4P

RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

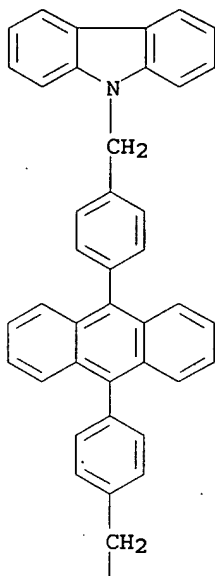
(carbazole derivs. used as host material of phosphorescent substance in organic **electroluminescent** devices)

RN 849820-42-4 HCAPLUS

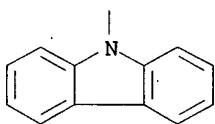
CN 9H-Carbazole, 9,9'-[9,10-anthracenediylbis(4,1-phenylenemethylene)]bis- (9CI) (CA INDEX NAME)



PAGE 1-A

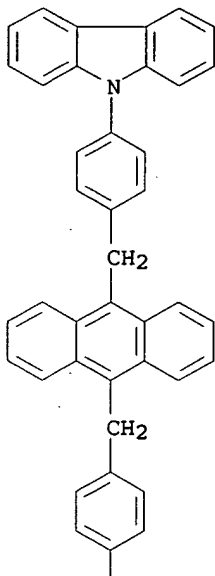


PAGE 2-A

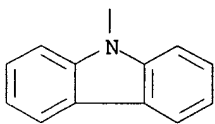


RN 849820-47-9 HCAPLUS  
CN 9H-Carbazole, 9,9'-[9,10-anthracenediylbis(methylene-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

PAGE 1-A

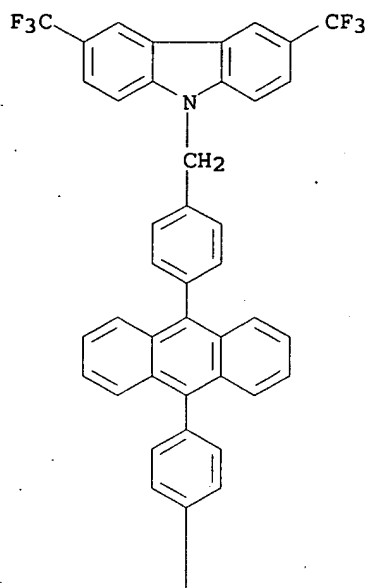


PAGE 2-A

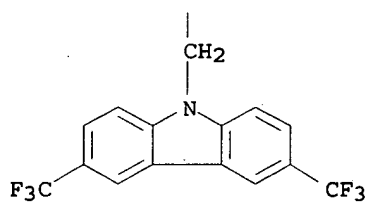


RN 849820-48-0 HCAPLUS  
CN 9H-Carbazole, 9,9'-[9,10-anthracenediylbis(4,1-phenylenemethylene)]bis[3,6-bis(trifluoromethyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

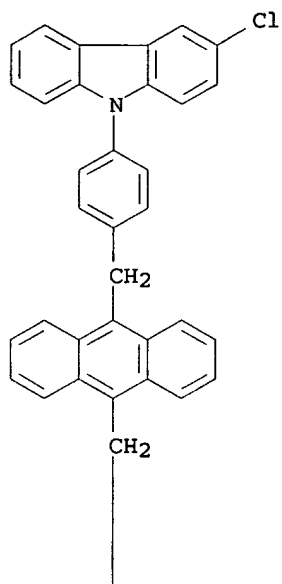


PAGE 2-A

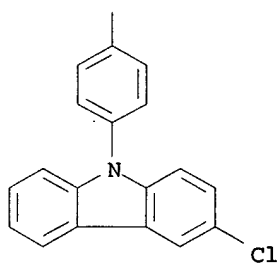


RN 849820-49-1 HCAPLUS  
CN 9H-Carbazole, 9,9'-[9,10-anthracenediylbis(methylene-4,1-phenylene)]bis[3-chloro- (9CI) (CA INDEX NAME)]

PAGE 1-A

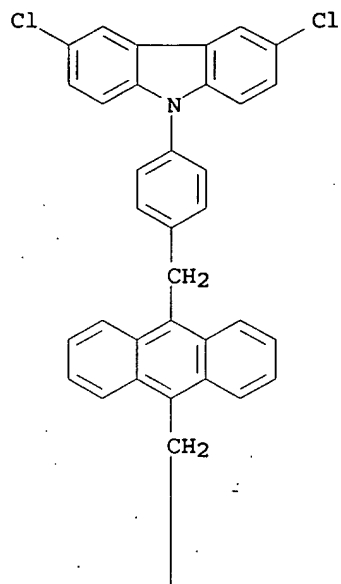


PAGE 2-A

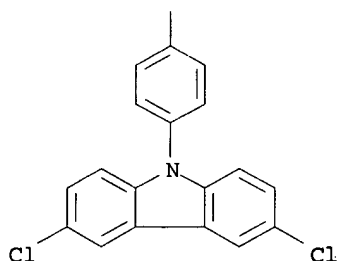


RN 849820-50-4 HCAPLUS  
CN 9H-Carbazole, 9,9'-[9,10-anthracenediylbis(methylene-4,1-phenylene)]bis[3,6-dichloro- (9CI) (CA INDEX NAME)]

PAGE 1-A



PAGE 2-A



IC ICM C07D209-86  
ICS C07D209-88; C09K011-06; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 27

ST carbazole deriv host phosphorescence org electroluminescent device

IT **Electroluminescent devices**  
Phosphorescent substances  
(carbazole derivs. used as host material of phosphorescent substance in organic **electroluminescent** devices)

IT 94928-86-6, Tris(2-phenylpyridine)iridium 376367-93-0  
RL: DEV (Device component use); USES (Uses)  
(carbazole derivs. used as host material of phosphorescent substance in organic **electroluminescent** devices)

IT 166256-60-6P 848679-72-1P 848724-46-9P 848724-49-2P  
848724-55-0P 848724-57-2P 849820-34-4P 849820-35-5P  
849820-36-6P 849820-37-7P 849820-38-8P 849820-39-9P  
849820-40-2P 849820-41-3P **849820-42-4P** 849820-43-5P  
849820-44-6P 849820-45-7P 849820-46-8P **849820-47-9P**  
**849820-48-0P 849820-49-1P 849820-50-4P**  
849820-51-5P 849820-52-6P 849820-53-7P 849820-54-8P  
849820-55-9P 849820-56-0P 849820-57-1P 849820-58-2P

849820-59-3P 849820-60-6P

RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(carbazole derivs. used as host material of phosphorescent substance in organic **electroluminescent** devices)

IT 86-74-8, Carbazole 623-25-6, 1,4-Bischloromethylbenzene 1733-76-2, 1,5-Bischloromethyl naphthalene 5599-50-8, 3,6-Dimethyl-9H-carbazole 6298-72-2, 1,4-Bischloromethyl-2,5-dimethylbenzene 6586-89-6, 1,4-Bischloromethyl naphthalene 10387-13-0, 9,10-Bischloromethyl anthracene 14568-83-3 23055-78-9, Bis(4-iodophenyl)methane 37500-95-1, 3,6-Di(tert-butyl)carbazole 56525-79-2, 3,6-Diphenyl-9H-carbazole 57102-93-9, 9H-Carbazole-3-carbonitrile 57103-03-4, 9H-Carbazole-3,6-dicarbonitrile 103012-26-6, 3-Phenyl-9H-carbazole 474115-76-9 765314-49-6 849820-61-7 849820-62-8 849820-63-9 849820-64-0 849820-65-1 849820-66-2 849820-67-3 849820-68-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(carbazole derivs. used as host material of phosphorescent substance in organic **electroluminescent** devices)

L104 ANSWER 2 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2005:200122 Document No. 142:438624 Chromophore-Labeled Quinoxaline Derivatives as Efficient **Electroluminescent** Materials. Thomas, K. R. Justin; Velusamy, Marappan; Lin, Jiann T.; Chuen, Chang-Hao; Tao, Yu-Tai (Institute of Chemistry, Academia Sinica, Taipei, Taiwan). Chemistry of Materials, 17(7), 1860-1866 (English) 2005. CODEN: CMATEX. ISSN: 0897-4756. Publisher: American Chemical Society.

AB **Electroluminescent** materials comprising quinoxaline, triarylamine, and fluorophores such as carbazole, pyrene, and fluorene were prepared by using a key step involving a Pd-catalyzed C-N coupling reaction. Chromophores were embedded both at quinoxaline and triarylamine units, and their influence on photophys. and thermal properties was investigated. Quinoxalines possessing more electron-donating amines exhibit lower fluorescence quantum efficiency and the photoluminescence (PL) is severely affected by the polarity of the solvent used for measurement. Bulky and rigid aromatic groups such as pyrene and carbazole enhance the glass transition temperature of the derivs. Oxidation potential of the triarylamine was easily tuned by the aromatic substituents while retaining the reduction potential of the quinoxaline segment. This provides the authors a method for tuning the photophys. and thermal properties maintaining the energy levels of the dipolar compds. The **electroluminescent** devices fabricated using these materials as hole-transporters and emitters led to intense **light emission**. The emission color is green and corresponds well with the film PL of the material used. Electronic supplementary information (ESI) is available at <http://pubs.acs.org> and contains synthesis and characterization details of thebromophenyl quinoxaline precursors.

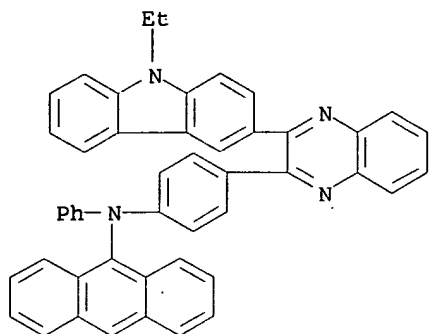
IT 850888-63-0P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(synthesis and photophys./thermal/electrochem. properties of chromophore-labeled quinoxaline derivs. for **OLED** displays)

RN 850888-63-0 HCAPLUS

CN 9-Anthracenamine, N-[4-[3-(9-ethyl-9H-carbazol-3-yl)-2-quinoxalinyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 73
- ST chromophore substituted quinoxaline deriv **electroluminescent** material display application; quinoxaline compd fluorine carbazole deriv photophys **electroluminescent** display **OLED**; photophys thermal property quinoxaline compd fluorine carbazole deriv **OLED**
- IT **Electroluminescent** devices  
(displays, **OLED**; photophys./thermal/electrochem. properties of chromophore-labeled quinoxaline derivs. for **OLED** displays)
- IT Luminescent screens  
(**electroluminescent**, **OLED**; photophys./thermal/electrochem. properties of chromophore-labeled quinoxaline derivs. for **OLED** displays)
- IT Luminescent substances  
(**electroluminescent**; photophys./thermal/electrochem. properties of chromophore-labeled quinoxaline derivs. for **OLED** displays)
- IT Luminescence  
(photophys. properties of chromophore-labeled quinoxaline derivs. for **OLED** displays)
- IT Charge transfer transition  
Glass transition temperature  
Luminescence, **electroluminescence**  
Molecular structure-property relationship  
Oxidation potential  
Reduction potential  
Thermal stability  
(photophys./thermal/electrochem. properties of chromophore-labeled quinoxaline derivs. for **OLED** displays)
- IT Solvatochromism  
(solvatochromic emission shift of chromophore-labeled quinoxaline derivs. for **OLED** displays)
- IT UV and visible spectra  
(synthesis and photophys./thermal/electrochem. properties of chromophore-labeled quinoxaline derivs. for **OLED** displays)
- IT 2085-33-8, Alq3 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 50926-11-9, ITO 123847-85-8, 1,4-Bis[(1-naphthylphenyl)amino]biphenyl 192198-85-9, TPBI  
RL: DEV (Device component use); USES (Uses)  
(performance of chromophore-labeled quinoxaline derivs in **electroluminescent** displays)
- IT 75-09-2, Dichloromethane, properties 108-88-3, Toluene, properties  
RL: PRP (Properties)  
(solvent effect of; solvatochromic emission shift of chromophore-labeled quinoxaline derivs. for **OLED**)

displays)  
IT 850888-54-9P 850888-55-0P 850888-56-1P 850888-57-2P  
850888-58-3P 850888-59-4P 850888-60-7P 850888-61-8P  
850888-63-0P 850888-65-2P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
preparation); PREP (Preparation); USES (Uses)  
(synthesis and photophys./thermal/electrochem. properties of  
chromophore-labeled quinoxaline derivs. for OLED  
displays)

L104 ANSWER 3 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2005:183010 Document No. 142:248743 Organic electroluminescent  
device and its fabrication method. Kambe, Emiko; Ebisawa,  
Akira; Shirai, Satoshi; Shinkai, Masahiro; Inoue, Tetsushi (TDK  
Corporation, Japan). PCT Int. Appl. WO 2005020642 A1 20050303, 89  
pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG,  
BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,  
EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,  
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,  
MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,  
SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR,  
GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.  
(Japanese). CODEN: PIXXD2. APPLICATION: WO 2004-JP12024 20040820.  
PRIORITY: JP 2003-296531 20030820.

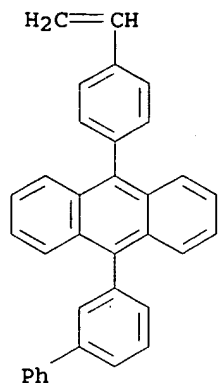
AB An organic EL device comprising a substrate, a  
first electrode layer and a second  
electrode layer arranged opposite to each other on one  
side of the substrate, and a light-emitting  
layer interposed between these electrode layers is  
characterized in that one of the first electrode  
layer and the second electrode layer  
serves as a hole injecting electrode  
layer while the other serves as an electron  
injecting electrode layer, and a modified portion  
containing an organic polymer compound other than the organic compound  
constituting the light-emitting layer  
is unevenly formed in the light-emitting  
layer on the side of electron injection  
electrode layer.

IT 845524-31-4  
RL: DEV (Device component use); USES (Uses)  
(organic EL device and method for manufacturing same)  
RN 845524-31-4 HCAPLUS  
CN Anthracene, 9-[1,1'-biphenyl]-3-yl-10-(4-ethenylphenyl)-,  
homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 845524-30-3  
CMF C34 H24





IC ICM H05B033-14  
ICS H05B033-10; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 38

ST org **electroluminescent device** manufg

IT **Electroluminescent devices**  
Semiconductor **device** fabrication  
(organic **EL device** and method for manufacturing same)

IT Polyoxyaldehydes, uses  
RL: DEV (Device component use); USES (Uses)  
(organic **EL device** and method for manufacturing same)

IT 9003-53-6D, sulfonated  
RL: DEV (Device component use); USES (Uses)  
(PSS; organic **EL device** and method for manufacturing same)

IT 517-51-1, Rubrene 9003-39-8, Polyvinylpyrrolidone 9003-53-6, Polystyrene 9011-14-7, PMMA 15435-71-9, uses 25014-15-7, Poly(2-vinylpyridine) 25322-68-3, Polyethyleneglycol 126213-51-2, PEDOT 138184-36-8, MEH-PPV 845524-31-4  
RL: DEV (Device component use); USES (Uses)  
(organic **EL device** and method for manufacturing same)

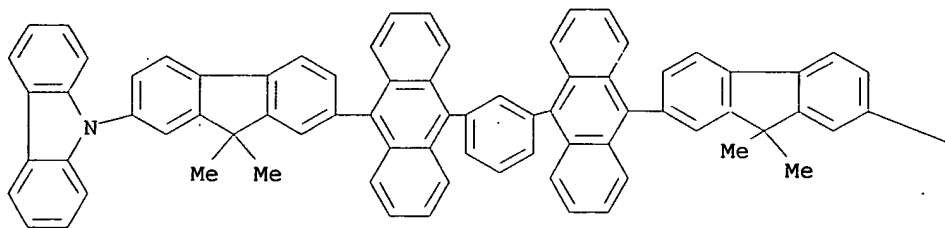
L104 ANSWER 4 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2005:33477 Document No. 142:102875 Anthracene compounds and organic **electroluminescent** devices using them with improved durability. Tanabe, Yoshimitsu; Tsukada, Hidetaka; Shimamura, Takehiko; Totani, Yoshiyuki (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2005008559 A2 20050113, 43 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-174603 20030619.

AB The compds., depicted as X1Q1ZQ2X2 [X1,2 = (un)substituted fluorenyl; Q1,2 = (un)substituted anthracenediyl; Z = (un)substituted phenylene], are contained in **EL (electroluminescent)** or hole-injection and -transport layers of the devices.

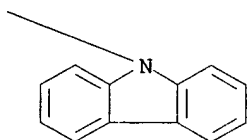
IT 817642-23-2P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(anthracene compound, **EL** or hole-injection and -transport layer; organic **EL** devices with improved durability using anthracene compds.)

RN 817642-23-2 HCAPLUS  
CN 9H-Carbazole, 9,9'-[1,3-phenylenebis[10,9-anthracenediyl(9,9-dimethyl-9H-fluorene-7,2-diyl)]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



- IC ICM C07C015-60  
ICS C07C023-42; C07C211-60; C07C211-61; C09K011-06; H05B033-14;  
H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25
- ST anthracene compd org **EL** device durability;  
**electroluminescent** device fluorenylanthracenylphenylene hole injection transport
- IT Polycarbonates, uses  
RL: DEV (Device component use); USES (Uses)  
(hole-injection and -transport layer; organic **EL** devices with improved durability using anthracene compds.)
- IT **Electroluminescent** devices  
(organic **EL** devices with improved durability using anthracene compds.)
- IT 817642-11-8P 817642-13-0P 817642-14-1P 817642-16-3P  
817642-18-5P 817642-19-6P 817642-20-9P 817642-22-1P  
817642-23-2P 817642-25-4P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(anthracene compound, **EL** or hole-injection and -transport layer; organic **EL** devices with improved durability using anthracene compds.)
- IT 817642-28-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(anthracene compound, **EL** or hole-injection and -transport layer; organic **EL** devices with improved durability using anthracene compds.)
- IT 2085-33-8, Tris(8-quinolinolato)aluminum  
RL: DEV (Device component use); USES (Uses)  
(electron-injection and -transport layer; organic **EL** devices with improved durability using anthracene compds.)
- IT 817642-12-9P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES

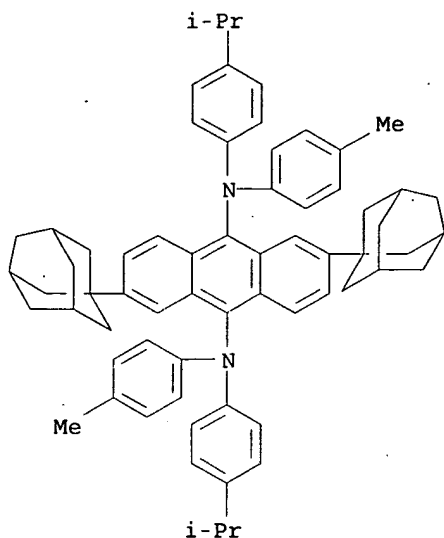
## (Uses)

- (for anthracene compound preparation; organic EL devices with improved durability using anthracene compds.)
- IT 400607-12-7P, 9-(9,9-Dimethyl-9H-fluoren-2-yl)-10-bromoanthracene  
736158-96-6P, 9-(9,9-Dimethyl-9H-fluoren-2-yl)anthracene  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
- (for anthracene compound preparation; organic EL devices with improved durability using anthracene compds.)
- IT 128-08-5, N-Bromosuccinimide 1564-64-3, 9-Bromoanthracene  
4612-26-4, 1,4-Phenylenediboronic acid 4612-28-6,  
1,3-Phenylenediboronic acid 333432-28-3, 9,9-Dimethyl-9H-fluorene-2-boronic acid 400607-14-9, 9-(9,9-Diphenyl-9H-fluoren-2-yl)-10-bromoanthracene 400607-31-0, 9,9-Diphenyl-9H-fluorene-2-boronic acid 522616-04-2, 9-(7-N-Carbazolyl-9,9-dimethyl-9H-fluoren-2-yl)-10-bromoanthracene 768398-92-1, 9,9-Dicyclohexyl-9H-fluorene-2-boronic acid 817642-15-2, 9,9-Bis(4-N,N-dimethylaminophenyl)-9H-fluorene-2-boronic acid 817642-17-4, 9-(9,9-Dicyclohexyl-9H-fluoren-2-yl)-10-bromoanthracene 817642-21-0, 9-(7-N,N-Diphenylamino-9,9-dimethyl-9H-fluoren-2-yl)-10-bromoanthracene 817642-24-3, 9-[7-N-Phenyl-N-(1-naphthyl)amino-9,9-dimethyl-9H-fluoren-2-yl]-10-bromoanthracene  
RL: RCT (Reactant); RACT (Reactant or reagent)
- (for anthracene compound preparation; organic EL devices with improved durability using anthracene compds.)
- IT 517-51-1, Rubrene 9011-14-7, Poly(methyl methacrylate)  
51325-05-4, Poly(2,5-thiophenediyl) 123847-85-8 124729-98-2  
RL: DEV (Device component use); USES (Uses)
- (hole-injection and -transport layer; organic EL devices with improved durability using anthracene compds.)

L104 ANSWER 5 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:902330 Document No. 141:386152 Aromatic amine derivative and organic electroluminescent device employing the same.  
Funahashi, Masakazu (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2004092111 A1 20041028, 43 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.  
APPLICATION: WO 2004-JP140 20040113. PRIORITY: JP 2003-106231 20030410.

- AB Disclosed is an aromatic amine derivative having a specific structure comprising a substituted anthracene structure and connected thereto an amine structure substituted by a substituted benzene ring; and an organic electroluminescent device comprising a cathode, an anode, and  $\geq 1$  thin organic film layers sandwiched therebetween which comprise at least a luminescent layer, wherein at least 1 of the thin organic film layers consists only of the aromatic amine derivative or contains the derivative as a component of a mixture. The device is high in luminance and luminescence efficiency and has a long life. The aromatic amine derivative is a novel 1 which realizes the device.
- IT 782504-30-7P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(aromatic amine derivative for organic electroluminescent device)
- RN 782504-30-7 HCAPLUS.
- CN 9,10-Anthracenediamine, N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-bis(4-methylphenyl)-2,6-bis(tricyclo[3.3.1.1.3,7]dec-1-yl)- (9CI) (CA INDEX NAME)



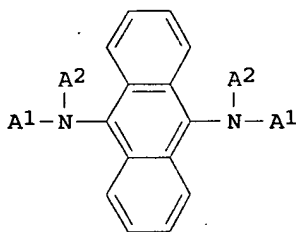
IC ICM C07C211-61  
ICS C09K011-06; H05B033-14; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25, 74  
ST arom amine deriv org **electroluminescent** device  
IT **Electroluminescent** devices  
(aromatic amine derivative for organic **electroluminescent** device)  
IT Amines, uses  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(aromatic; aromatic amine derivative for organic **electroluminescent** device)  
IT Luminescent substances  
(**electroluminescent**; aromatic amine derivative for organic **electroluminescent** device)  
IT 668020-34-6P **782504-30-7P** 782504-31-8P 782504-32-9P  
782504-34-1P 782504-36-3P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(aromatic amine derivative for organic **electroluminescent** device)  
IT 620-93-9 5650-10-2, 4-Isopropyldiphenylamine 62375-58-0,  
2,6-Di(tert-butyl)anthracene 77074-17-0 494834-22-9  
782504-33-0 782504-35-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(aromatic amine derivative for organic **electroluminescent** device)

L104 ANSWER 6 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:756795 Document No. 141:285537 Organic **electroluminescent** device employing a derivative of 9,10-diaminoanthracene as a green luminescent dopant. Seo, Jeong Dae; Kim, Hee Jung; Lee, Kyung Hoon; Oh, Hyung Yun; Kim, Myung Seop; Park, Chun Gun (LG Electronics Inc., S. Korea). PCT Int. Appl. WO 2004078872 A2 20040916, 35 pp. DESIGNATED STATES: W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI, NI, NO; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, ML, MR, NE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2004-KR472 20040305.

PRIORITY: KR 2003-13700 20030305; KR 2003-20468 20030401.

GI



I

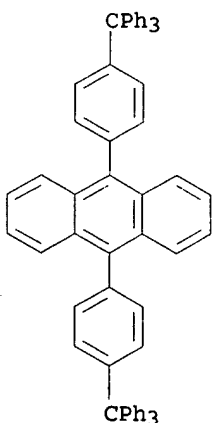
AB Organic electroluminescent devices (OLEDs) are described which comprise a substrate; a first and second electrodes formed on the substrate; and a **light-emitting** layer formed between the first electrode and the second electrode, with the **light-emitting** layer having a plurality of materials and being a green luminescent material using a dopant with chemical formula I where at least one of A1 and A2 is selected from a substituted or non-substituted aromatic group, a heterocyclic group, an aliphatic group and hydrogen. The materials forming the **light-emitting** layer together with the material of chemical formula (I) may have the formula B1-X-B2 where X is selected from naphthalene, fluorine, anthracene, phenanthrene, pyrene, perylene, quinoline, and isoquinoline; and at least one of B1 and B2 is selected from aryl, alkylaryl, alkoxyaryl, arylaminoaryl, alkylamino, and arylallyl.

IT 722498-63-7

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(**light-emitting** host; organic  
electroluminescent device employing derivative of  
9,10-diaminoanthracene as green luminescent dopant)

RN 722498-63-7 HCAPLUS

CN Anthracene, 9,10-bis[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM C09K

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 76

ST org electroluminescent device diaminoanthracene deriv  
green luminescent dopant OLED

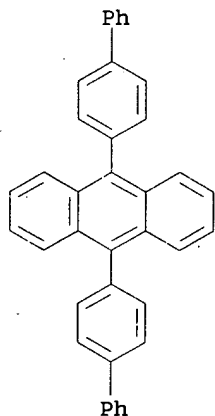
- IT Luminescent substances  
(green dopant; organic **electroluminescent** device employing derivative of 9,10-diaminoanthracene as green luminescent dopant)
- IT **Electroluminescent devices**  
(organic **electroluminescent** device employing derivative of 9,10-diaminoanthracene as green luminescent dopant)
- IT 26979-27-1 43069-36-9 55009-75-1 331749-28-1 400606-81-7  
626236-19-9 653599-45-2 653599-46-3 722498-56-8 722498-57-9  
722498-58-0 722498-59-1 722498-60-4 722498-61-5 722498-62-6  
722498-64-8 722498-65-9 722498-66-0 722498-67-1 722498-68-2  
722498-69-3 722498-70-6 722498-71-7 722498-72-8 722498-73-9  
722498-74-0 722498-75-1 756899-77-1  
RL: DEV (Device component use); USES (Uses)  
(**light-emitting** host; organic **electroluminescent** device employing derivative of 9,10-diaminoanthracene as green luminescent dopant)
- IT 722498-63-7  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(**light-emitting** host; organic **electroluminescent** device employing derivative of 9,10-diaminoanthracene as green luminescent dopant)
- IT 2085-33-8, Alq3 123847-85-8, NPB  
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device employing derivative of 9,10-diaminoanthracene as green luminescent dopant)
- IT 177799-14-3 177799-16-5 189263-82-9 190974-21-1 473717-08-7  
756899-41-9 756899-42-0 756899-43-1 756899-44-2 756899-45-3  
756899-46-4 756899-47-5 756899-48-6 756899-49-7 756899-50-0  
756899-51-1 756899-52-2 756899-53-3 756899-54-4 756899-55-5  
756899-56-6 756899-57-7 756899-58-8 756899-59-9 756899-60-2  
756899-61-3 756899-62-4 756899-63-5 756899-64-6 756899-66-8  
756899-67-9 756899-68-0 756899-69-1 756899-70-4 756899-71-5  
756899-72-6 756899-73-7 756899-74-8 756899-75-9 756899-76-0  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(organic **electroluminescent** device employing derivative of 9,10-diaminoanthracene as green luminescent dopant)
- IT 177799-11-0P 189263-81-8P 756899-65-7P  
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic **electroluminescent** device employing derivative of 9,10-diaminoanthracene as green luminescent dopant)
- L104 ANSWER 7 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:681260 Document No. 141:215358 Organic **electroluminescent device**. Seo, Jeong Dae; Kim, Hee Jung; Lee, Kyung Hoon; Oh, Hyoungh Yun; Kim, Myung Seop; Park, Chun Gun (LG Electronics Inc., S. Korea). U.S. Pat. Appl. Publ. US 2004161633 A1 20040819, 19 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-779875 20040218. PRIORITY: KR 2003-10393 20030219.
- AB Organic **electroluminescent devices** including a substrate, **first** and **second** electrodes, a **light-emitting layer** formed between the **first** electrode and the **second** electrode, and a **hole-blocking layer** formed between the **light-emitting layer** and the **second** electrode are described in which the **hole-blocking layer** is an anthracene derivative with substituents at the 9 and 10 positions,  $\geq 1$  the substituents being selected from a (un)substituted aromatic groups, heterocyclic groups, aliphatic groups, halogens, and H.
- IT 43069-36-9, Anthracene, 9,10-bis([1,1'-biphenyl]-4-yl)-  
99372-96-0 186412-15-7 194295-98-2  
194296-12-3 194296-19-0 614735-06-7  
722498-63-7 741255-50-5 741255-51-6

741255-52-7 741255-53-8 741255-55-0  
741255-56-1 741255-58-3 741255-59-4  
741255-60-7 741255-61-8 741255-62-9  
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741255-66-3 741255-67-4 741255-68-5  
741255-69-6 741255-71-0 741255-72-1  
741255-73-2 741255-74-3 741255-75-4  
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741255-88-9 741255-89-0 741255-90-3  
741255-91-4 741255-92-5 741255-93-6  
741255-94-7 741255-95-8 741255-96-9  
741255-97-0 741255-98-1 741255-99-2  
741256-00-8 741256-01-9 741256-02-0  
741256-03-1 741256-04-2 741256-05-3  
741256-06-4 741256-07-5 741256-08-6  
741256-09-7 741256-10-0

RL: DEV (Device component use); USES (Uses)  
(organic electroluminescent devices with  
9,10-anthracene derivative-based hole-blocking  
layers)

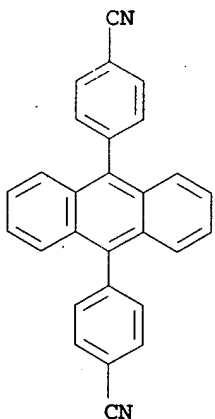
RN 43069-36-9 HCAPLUS

CN Anthracene, 9,10-bis([1,1'-biphenyl]-4-yl)- (9CI) (CA INDEX NAME)

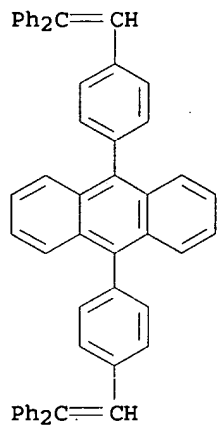


RN 99372-96-0 HCAPLUS

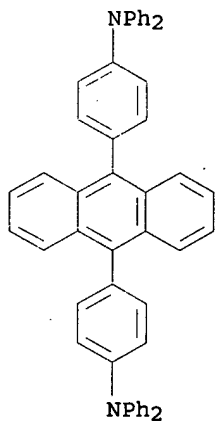
CN Benzonitrile, 4,4'-(9,10-anthracenediyl)bis- (9CI) (CA INDEX NAME)



RN 186412-15-7 HCAPLUS  
CN Anthracene, 9,10-bis[4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA  
INDEX NAME)



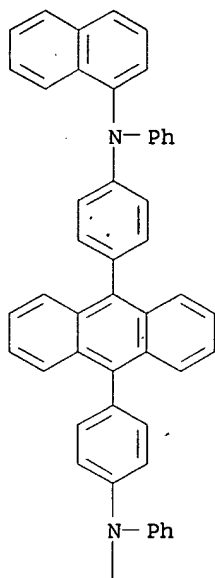
RN 194295-98-2 HCAPLUS  
CN Benzenamine, 4,4'-(9,10-anthracenediyl)bis[N,N-diphenyl]- (9CI) (CA  
INDEX NAME)



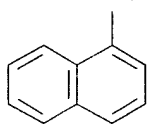
RN 194296-12-3 HCAPLUS  
CN 1-Naphthalenamine, N,N'-(9,10-anthracenediyl)di-4,1-phenylene)bis[N-  
phenyl]- (9CI) (CA INDEX NAME)



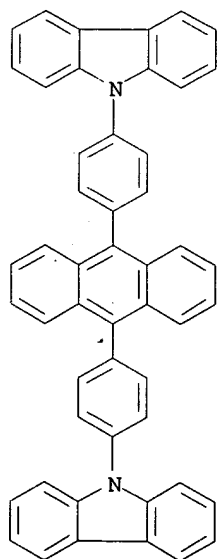
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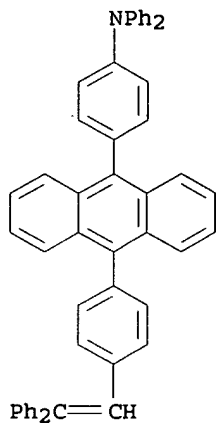
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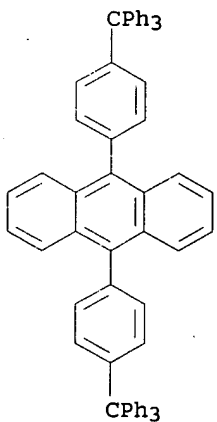
RN 194296-19-0 HCAPLUS  
 CN 9H-Carbazole, 9,9'-(9,10-anthracenediyl-di-4,1-phenylene)bis- (9CI)  
 (CA INDEX NAME)



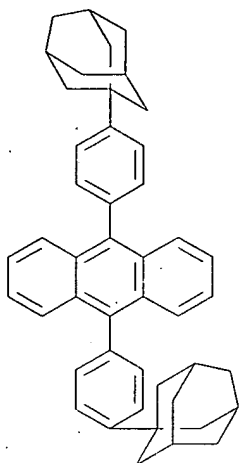
RN 614735-06-7 HCAPLUS  
CN Benzenamine, 4-[10-[4-(2,2-diphenylethenyl)phenyl]-9-anthracenyl]-  
N,N-diphenyl- (9CI) (CA INDEX NAME)



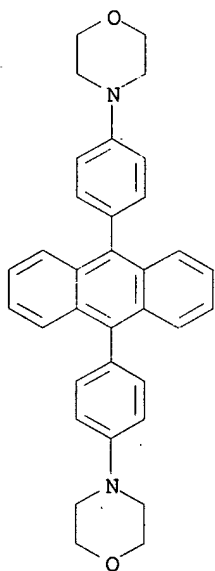
RN 722498-63-7 HCAPLUS  
CN Anthracene, 9,10-bis[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX  
NAME)



RN 741255-50-5 HCAPLUS  
CN Anthracene, 9,10-bis(4-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylphenyl)- (9CI)  
(CA INDEX NAME)

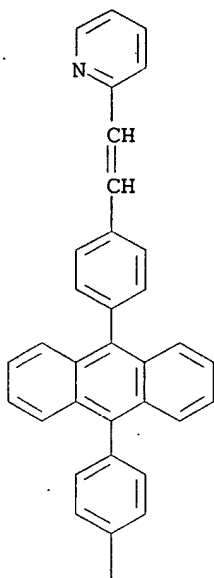


RN 741255-51-6 HCAPLUS  
CN Morpholine, 4,4'-(9,10-anthracenediyl)bis- (9CI)  
(CA INDEX NAME)

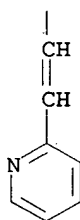


RN 741255-52-7 HCAPLUS  
CN Pyridine, 2,2'-[9,10-anthracenediylbis(4,1-phenylene-2,1-ethenediyl)]bis- (9CI) (CA INDEX NAME)

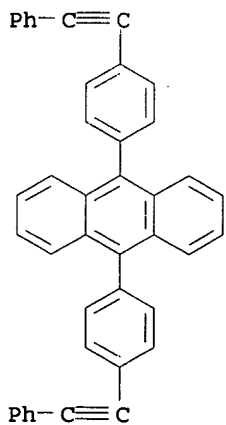
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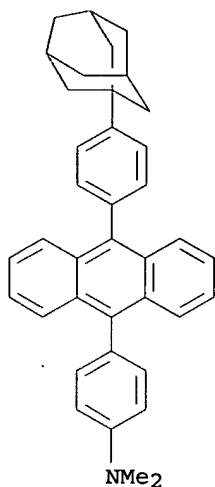


RN 741255-53-8 HCAPLUS  
 CN Anthracene, 9,10-bis[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX  
 NAME)



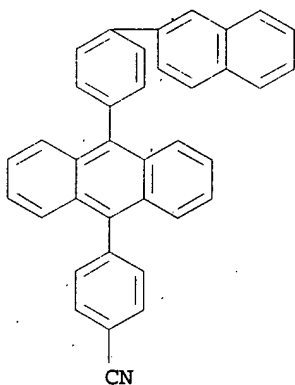
RN 741255-55-0 HCAPLUS

CN Benzenamine, N,N-dimethyl-4-[10-(4-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylphenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



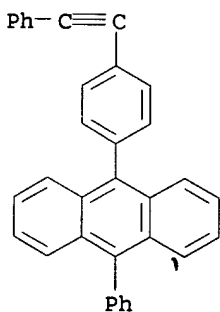
RN 741255-56-1 HCAPLUS

CN Benzonitrile, 4-[10-[4-(2-naphthalenyl)phenyl]-9-anthracenyl]- (9CI)  
(CA INDEX NAME)

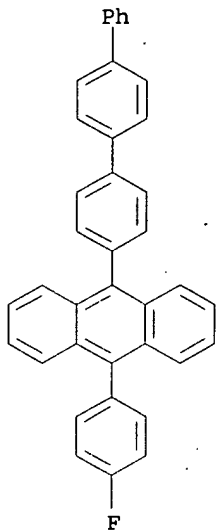


RN 741255-58-3 HCAPLUS

CN Anthracene, 9-phenyl-10-[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)

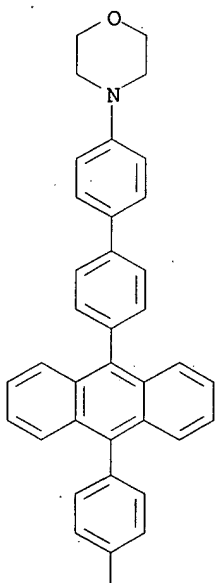


RN 741255-59-4 HCAPLUS  
CN Anthracene, 9-(4-fluorophenyl)-10-[1,1':4',1''-terphenyl]-4-yl-  
(9CI) (CA INDEX NAME)



RN 741255-60-7 HCAPLUS  
CN Morpholine, 4-[4'-[10-[4-(1,1-dimethylethyl)phenyl]-9-anthracenyl][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)

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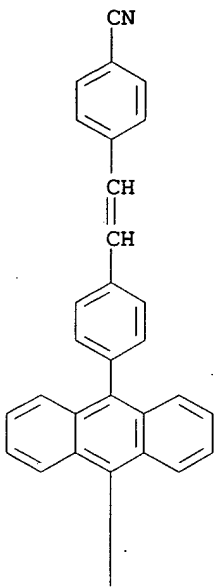


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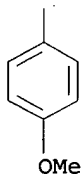
t-Bu

RN 741255-61-8 HCAPLUS  
CN Benzonitrile, 4-[2-[4-[10-(4-methoxyphenyl)-9-anthracenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

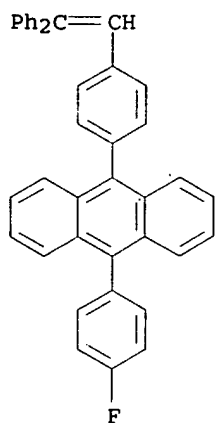
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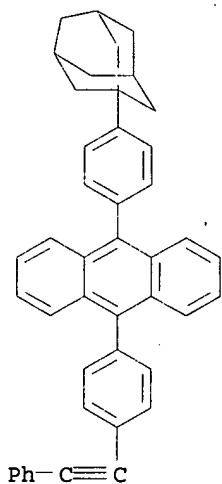


RN 741255-62-9 HCAPLUS  
CN Anthracene, 9-[4-(2,2-diphenylethenyl)phenyl]-10-(4-fluorophenyl)- (9CI) (CA INDEX NAME)



RN 741255-63-0 HCAPLUS

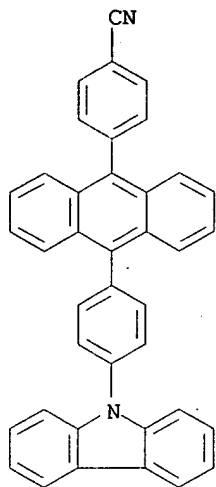
CN Anthracene, 9-[4-(phenylethynyl)phenyl]-10-(4-tricyclo[3.3.1.1.3,7]dec-1-ylphenyl)- (9CI) (CA INDEX NAME)



RN 741255-64-1 HCAPLUS

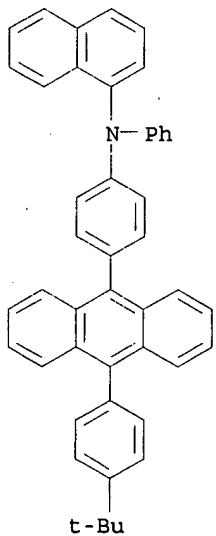
CN Benzonitrile, 4-[10-[4-(9H-carbazol-9-yl)phenyl]-9-anthracenyl]- (9CI) (CA INDEX NAME)





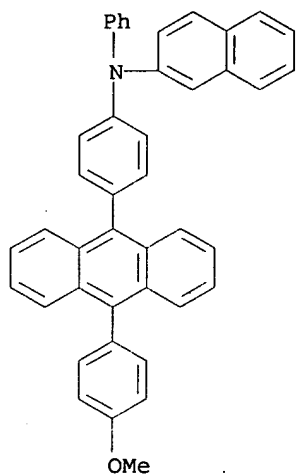
RN 741255-65-2 HCAPLUS

CN 1-Naphthalenamine, N-[4-[10-[4-(1,1-dimethylethyl)phenyl]-9-anthracenyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



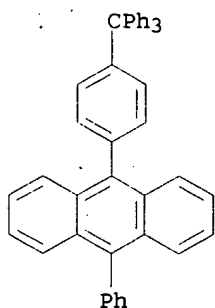
RN 741255-66-3 HCAPLUS

CN 2-Naphthalenamine, N-[4-[10-(4-methoxyphenyl)-9-anthracenyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



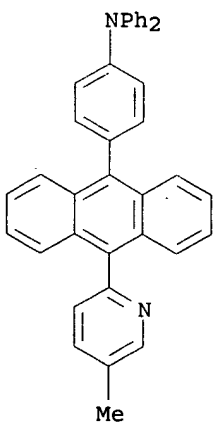
RN 741255-67-4 HCAPLUS

CN Anthracene, 9-phenyl-10-[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 741255-68-5 HCAPLUS

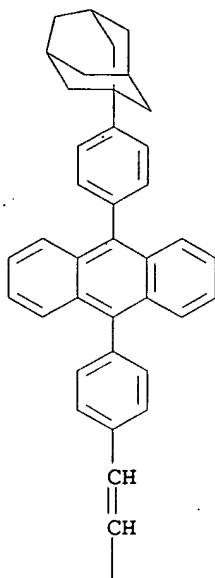
CN Benzenamine, 4-[10-(5-methyl-2-pyridinyl)-9-anthracenyl]-N,N-diphenyl- (9CI) (CA INDEX NAME)



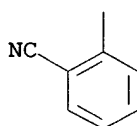
RN 741255-69-6 HCAPLUS

CN Benzonitrile, 2-[2-[4-[10-(4-tricyclo[3.3.1.1.3,7]dec-1-ylphenyl)-9-anthracenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

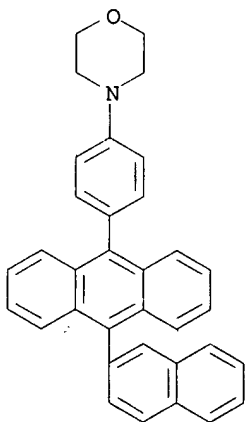
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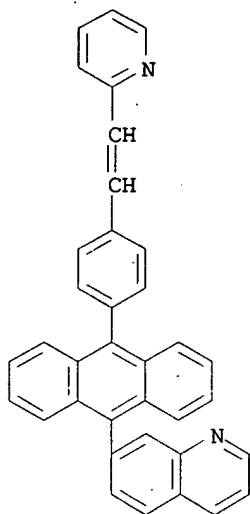
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RN 741255-71-0 HCAPLUS  
 CN Morpholine, 4-[4-[10-(2-naphthalenyl)-9-anthracenyl]phenyl]- (9CI)  
 (CA INDEX NAME)

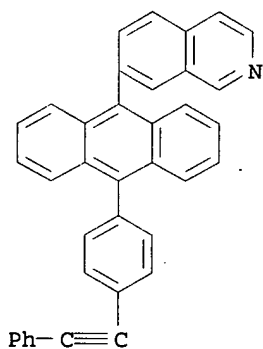


RN 741255-72-1 HCAPLUS  
 CN Quinoline, 7-[10-[4-[2-(2-pyridinyl)ethenyl]phenyl]-9-anthracenyl]-  
 (9CI) (CA INDEX NAME)



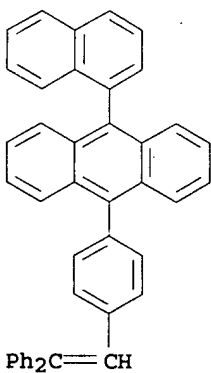
RN 741255-73-2 HCAPLUS

CN Isoquinoline, 7-[10-[4-(phenylethynyl)phenyl]-9-anthracenyl]- (9CI)  
(CA INDEX NAME)

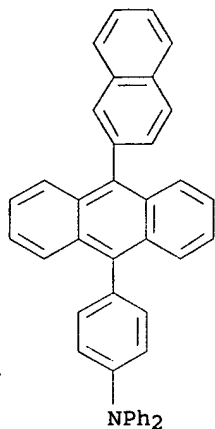


RN 741255-74-3 HCAPLUS

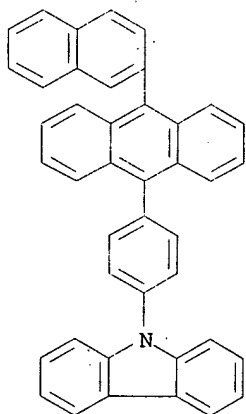
CN Anthracene, 9-[4-(2,2-diphenylethenyl)phenyl]-10-(1-naphthalenyl)-  
(9CI) (CA INDEX NAME)



RN 741255-75-4 HCAPLUS

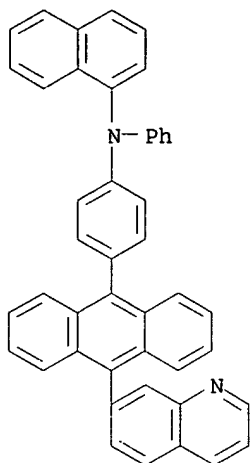
CN Benzenamine, 4-[10-(2-naphthalenyl)-9-anthracenyl]-N,N-diphenyl-  
(9CI) (CA INDEX NAME)

RN 741255-76-5 HCAPLUS

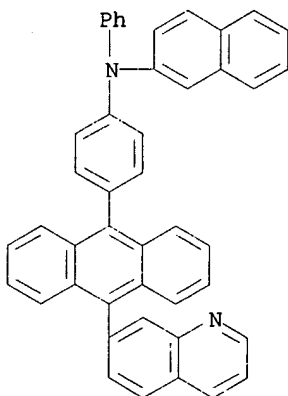
CN 9H-Carbazole, 9-[4-[10-(2-naphthalenyl)-9-anthracenyl]phenyl]- (9CI)  
(CA INDEX NAME)

RN 741255-77-6 HCAPLUS

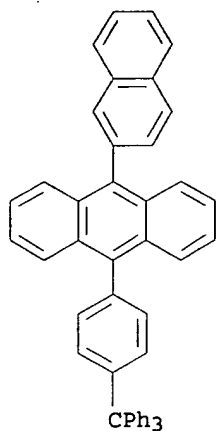
CN 1-Naphthalenamine, N-phenyl-N-[4-[10-(7-quinolinyl)-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)



RN 741255-78-7 HCAPLUS  
CN 2-Naphthalenamine, N-phenyl-N-[4-[10-(7-quinolinyl)-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)

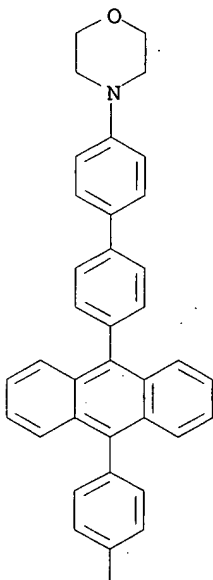


RN 741255-79-8 HCAPLUS  
CN Anthracene, 9-(2-naphthalenyl)-10-[4-(triphenylmethyl)phenyl]- (9CI)  
(CA INDEX NAME)

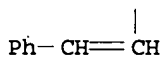


RN 741255-80-1 HCAPLUS  
 CN Morpholine, 4-[4'-[10-[4-(2-phenylethenyl)phenyl]-9-anthracenyl][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)

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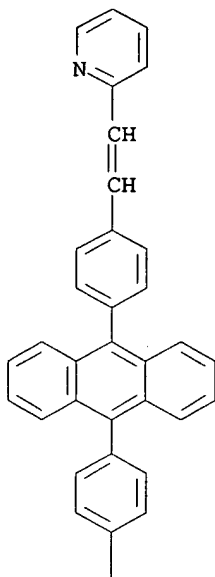


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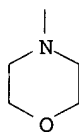


RN 741255-82-3 HCAPLUS  
 CN Morpholine, 4-[4-[10-[4-[2-(2-pyridinyl)ethenyl]phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)

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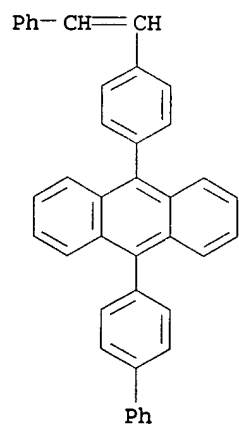


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RN 741255-84-5 HCAPLUS

CN Anthracene, 9-[1,1'-biphenyl]-4-yl-10-[4-(2-phenylethenyl)phenyl]-(9CI) (CA INDEX NAME)

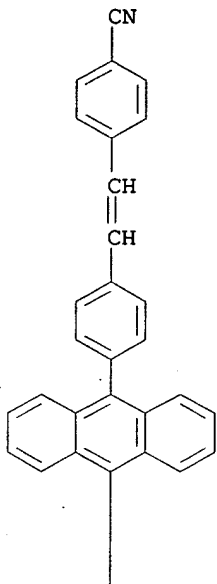


RN 741255-86-7 HCAPLUS

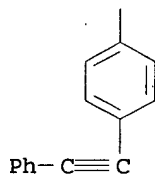
CN Benzonitrile, 4-[2-[4-[10-[4-(phenylethynyl)phenyl]-9-anthracenyl]phenyl]ethynyl]-(9CI) (CA INDEX NAME)



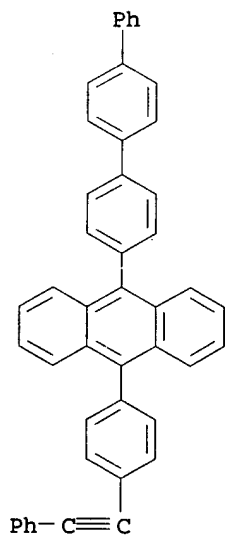
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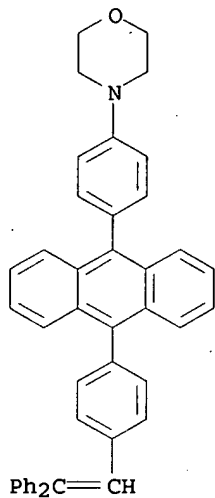
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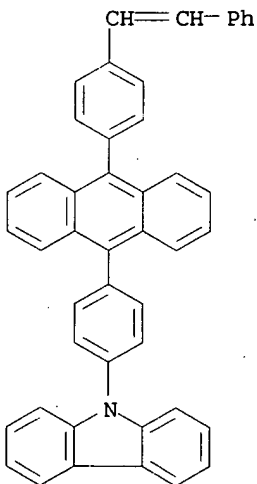
RN 741255-87-8 HCAPLUS  
 CN Anthracene, 9-[4-(2-phenylethynyl)phenyl]-10-[1,1':4',1''-terphenyl]-4-yl- (9CI) (CA INDEX NAME)



RN 741255-88-9 HCAPLUS  
CN Morpholine, 4-[4-[10-[4-(2,2-diphenylethenyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)

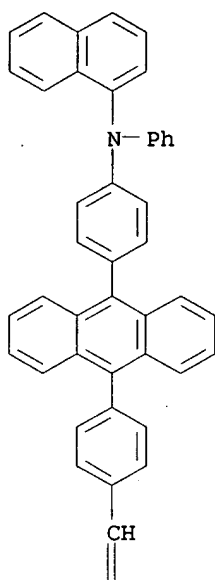


RN 741255-89-0 HCAPLUS  
CN 9H-Carbazole, 9-[4-[10-[4-(2-phenylethenyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)

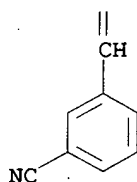


RN 741255-90-3 HCAPLUS  
CN Benzonitrile, 3-[2-[4-[10-[4-(1-naphthalenylphenylamino)phenyl]-9-anthracenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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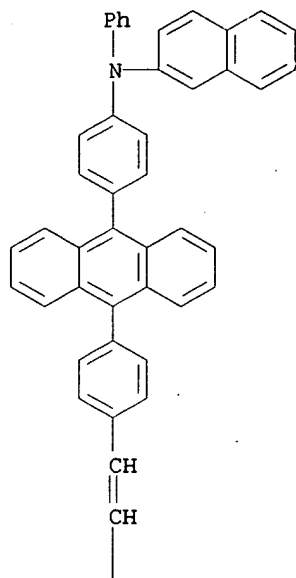


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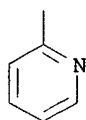


RN 741255-91-4 HCAPLUS  
CN 2-Naphthalenamine, N-phenyl-N-[4-[10-[4-[2-(2-pyridinyl)ethenyl]phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)

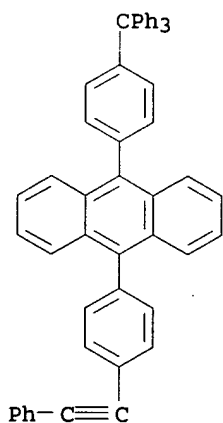
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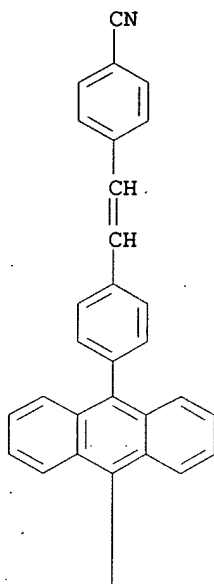


RN 741255-92-5 HCAPLUS  
 CN Anthracene, 9-[4-(phenylethynyl)phenyl]-10-[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX NAME)

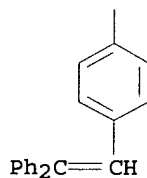


RN 741255-93-6 HCAPLUS  
 CN Benzonitrile, 4-[2-[4-[10-[4-(2,2-diphenylethenyl)phenyl]-9-anthracenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

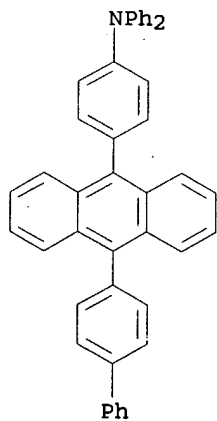
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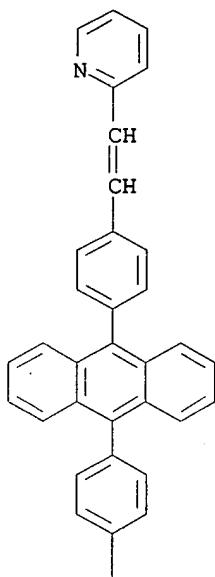


RN 741255-94-7 HCAPLUS  
 CN Benzenamine, 4-(10-[1,1'-biphenyl]-4-yl-9-anthracenyl)-N,N-diphenyl-  
 (9CI) (CA INDEX NAME)



RN 741255-95-8 HCAPLUS  
 CN Pyridine, 2-[2-[4-[10-(4-(triphenylmethyl)phenyl]-9-anthracenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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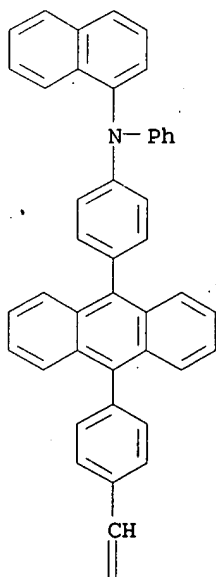


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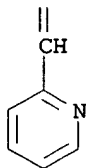


RN 741255-96-9 HCAPLUS  
CN 1-Naphthalenamine, N-phenyl-N-[4-[10-[4-[2-(2-pyridinyl)ethenyl]phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)

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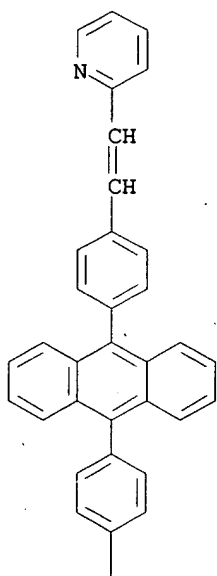


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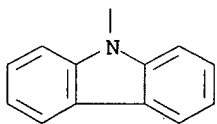


RN 741255-97-0 HCAPLUS  
CN 9H-Carbazole, 9-[4-[10-[4-[2-(2-pyridinyl)ethenyl]phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)

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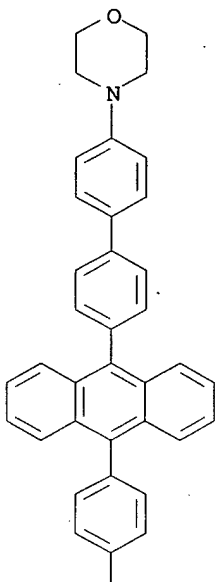


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RN 741255-98-1 HCAPLUS  
CN Benzenamine, 4-[10-[4'-(4-morpholinyl)[1,1'-biphenyl]-4-yl]-9-anthracenyl]-N,N-diphenyl- (9CI) (CA INDEX NAME)

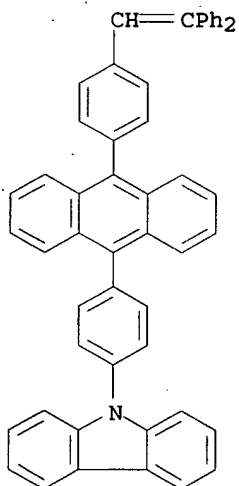
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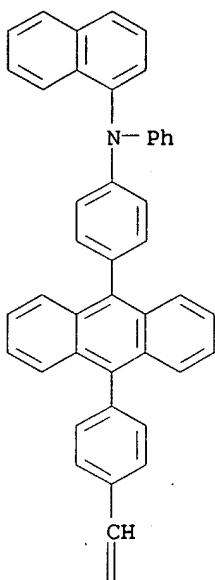
RN 741255-99-2 HCAPLUS  
 CN 9H-Carbazole, 9-[4-[10-[4-(2,2-diphenylethenyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)



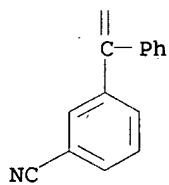
RN 741256-00-8 HCAPLUS  
 CN Benzonitrile, 3-[2-[4-[10-[4-(1-naphthalenylphenylamino)phenyl]-9-anthracenyl]phenyl]-1-phenylethenyl]- (9CI) (CA INDEX NAME)



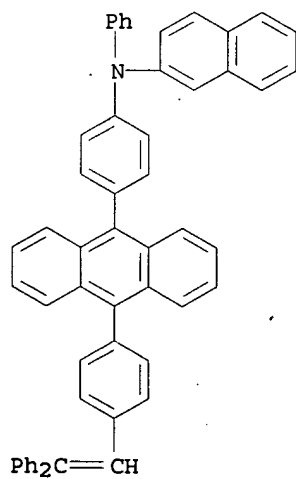
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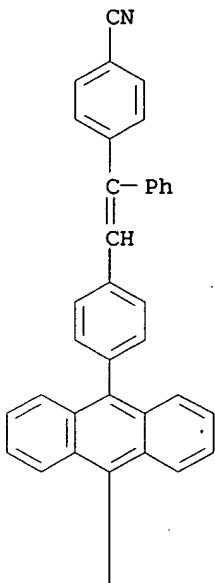
RN 741256-01-9 HCAPLUS  
 CN 2-Naphthalenamine, N-[4-[10-[4-(2,2-diphenylethenyl)phenyl]-9-anthracenyl]phenyl]-N-phenyl- (9CI). (CA INDEX NAME)



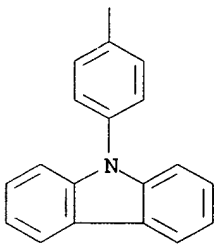
RN 741256-02-0 HCAPLUS

CN Benzonitrile, 4-[2-[4-[10-[4-(9H-carbazol-9-yl)phenyl]-9-anthracenyl]phenyl]-1-phenylethenyl]- (9CI) (CA INDEX NAME)

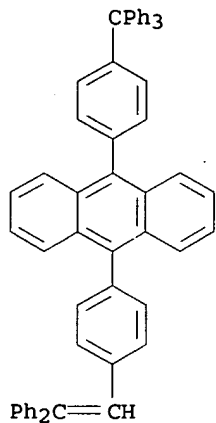
PAGE 1-A



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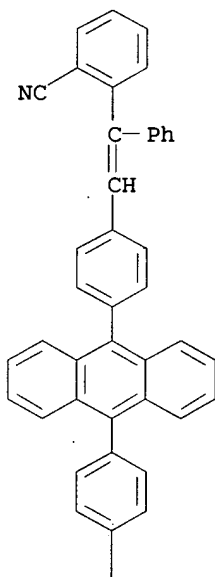


RN 741256-03-1 HCAPLUS  
 CN Anthracene, 9-[4-(2,2-diphenylethenyl)phenyl]-10-[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 741256-04-2 HCAPLUS  
 CN Benzonitrile, 2-[2-[4-[10-[4-(diphenylamino)phenyl]-9-anthracenyl]phenyl]-1-phenylethenyl]- (9CI) (CA INDEX NAME)

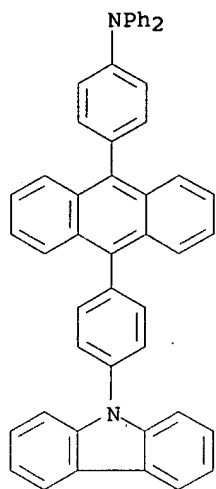
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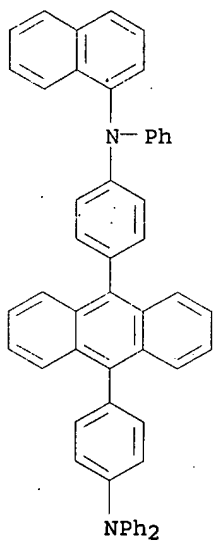


RN 741256-05-3 HCAPLUS  
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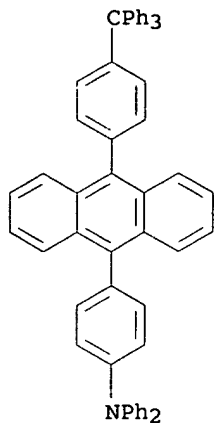
RN 741256-06-4 HCAPLUS

CN 1-Naphthalenamine, N-[4-[10-[4-(diphenylamino)phenyl]-9-anthracenyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



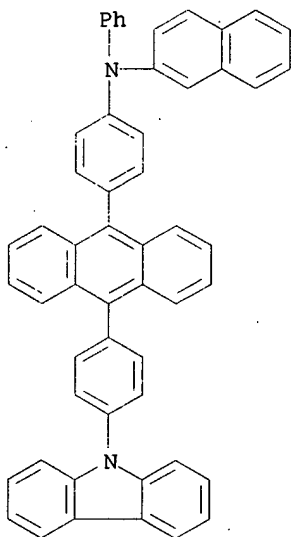
RN 741256-07-5 HCAPLUS

CN Benzenamine, N,N-diphenyl-4-[10-[4-(triphenylmethyl)phenyl]-9-anthracenyl]- (9CI) (CA INDEX NAME)



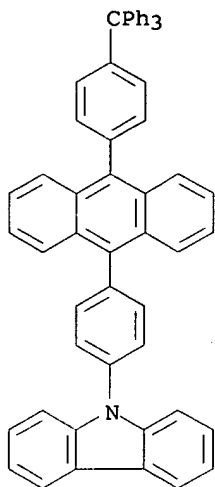
RN 741256-08-6 HCAPLUS

CN 2-Naphthalenamine, N-[4-[10-[4-(9H-carbazol-9-yl)phenyl]-9-anthracenyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



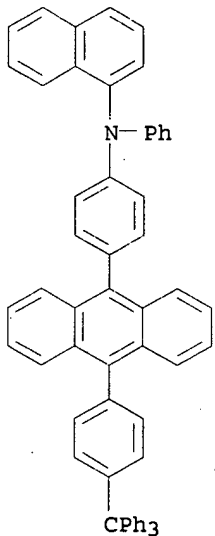
RN 741256-09-7 HCAPLUS

CN 9H-Carbazole, 9-[4-[10-[4-(triphenylmethyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)



RN 741256-10-0 HCAPLUS

CN 1-Naphthalenamine, N-phenyl-N-[4-[10-[4-(triphenylmethyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)



IC ICM H05B033-12

INCL 428690000; 428917000; 313504000; 313506000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

ST org electroluminescent device anthracene deriv  
hole blocking layer

IT Electroluminescent devices  
(organic; organic electroluminescent devices with  
9,10-anthracene derivative-based hole-blocking  
layers)

IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-  
hydroxyquinolinato)aluminum 43069-36-9, Anthracene,  
9,10-bis([1,1'-biphenyl]-4-yl)- 58328-31-7, CBP (dye)  
99372-96-0 122648-99-1 123847-85-8 186412-15-7  
194295-98-2 194296-12-3 194296-19-0

343978-79-0 614735-06-7 722498-63-7  
 741255-50-5 741255-51-6 741255-52-7  
 741255-53-8 741255-54-9 741255-55-0  
 741255-56-1 741255-57-2 741255-58-3  
 741255-59-4 741255-60-7 741255-61-8  
 741255-62-9 741255-63-0 741255-64-1  
 741255-65-2 741255-66-3 741255-67-4  
 741255-68-5 741255-69-6 741255-70-9  
 741255-71-0 741255-72-1 741255-73-2  
 741255-74-3 741255-75-4 741255-76-5  
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 741255-80-1 741255-82-3 741255-84-5  
 741255-86-7 741255-87-8 741255-88-9  
 741255-89-0 741255-90-3 741255-91-4  
 741255-92-5 741255-93-6 741255-94-7  
 741255-95-8 741255-96-9 741255-97-0  
 741255-98-1 741255-99-2 741256-00-8  
 741256-01-9 741256-02-0 741256-03-1  
 741256-04-2 741256-05-3 741256-06-4  
 741256-07-5 741256-08-6 741256-09-7  
 741256-10-0

RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent devices with  
 9,10-anthracene derivative-based hole-blocking  
 layers)

L104 ANSWER 8 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

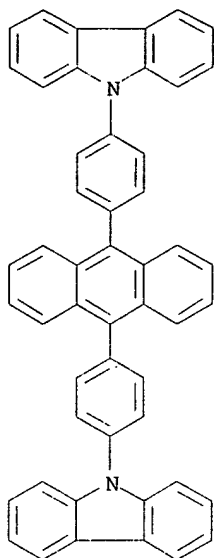
2004:681259 Document No. 141:215357 Organic electroluminescent  
 device and method for fabricating the same. Seo, Jeong Dae; Kim,  
 Hee Jung; Lee, Kyung Hoon; Oh, Hyoung Yun; Kim, Myung Seop; Park,  
 Chun Gun (LG Electronics Inc., S. Korea). U.S. Pat. Appl. Publ. US  
 2004161632 A1 20040819, 20 pp. (English). CODEN: USXXCO.  
 APPLICATION: US 2004-779874 20040218. PRIORITY: KR 2003-10394  
 20030219.

AB Organic electroluminescent devices are described which  
 comprise a substrate; a first electrode formed on the substrate; an  
 emission layer formed over the first electrode and having a first  
 (e.g., green) emission area, a second (e.g., red) emission area, and  
 a third (e.g., blue) emission area; a hole-blocking layer formed on  
 the emission layer, the hole-blocking layer being formed of  
 (≥1 of) the same substance(s) as the third emission area; and  
 a second electrode formed over the hole-blocking layer. Methods for  
 fabricating the devices entailing sequential formation of the layers  
 are also described.

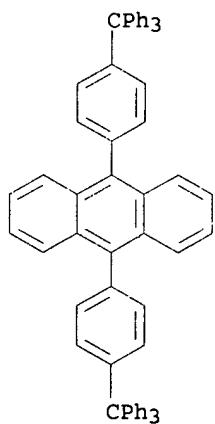
IT 194296-19-0 722498-63-7 741255-50-5  
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 741255-79-8 741255-89-0 741255-92-5  
 741255-95-8 741255-97-0 741255-99-2  
 741256-02-0 741256-03-1 741256-05-3  
 741256-07-5 741256-08-6 741256-09-7  
 741256-10-0

RL: DEV (Device component use); USES (Uses)  
 (multicolor-emitting organic electroluminescent devices  
 with hole-blocking layers and their fabrication)

RN 194296-19-0 HCAPLUS  
 CN 9H-Carbazole, 9,9'-(9,10-anthracenediyl-di-4,1-phenylene)bis- (9CI)  
 (CA INDEX NAME)

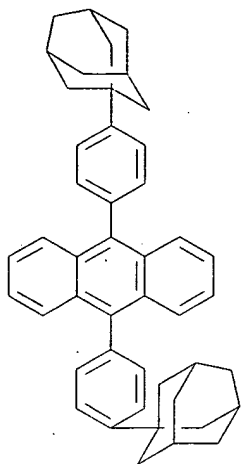


RN 722498-63-7 HCAPLUS  
CN Anthracene, 9,10-bis[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX NAME)



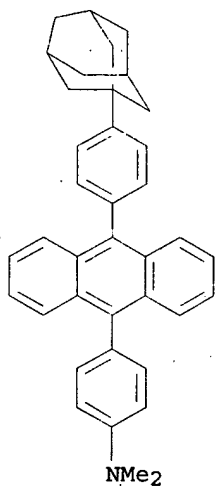
RN 741255-50-5 HCAPLUS  
CN Anthracene, 9,10-bis(4-tricyclo[3.3.1.1.3,7]dec-1-ylphenyl)- (9CI)  
(CA INDEX NAME)





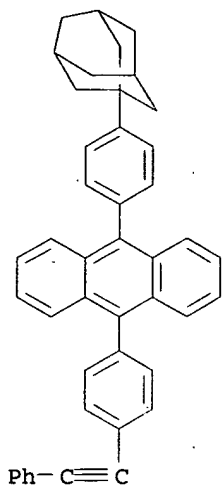
RN 741255-55-0 HCAPLUS

CN Benzenamine, N,N-dimethyl-4-[10-(4-tricyclo[3.3.1.1.3,7]dec-1-ylphenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



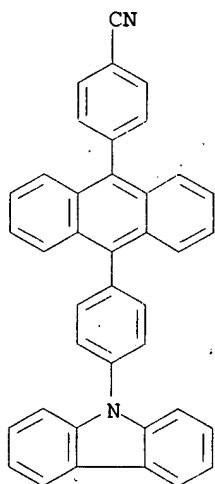
RN 741255-63-0 HCAPLUS

CN Anthracene, 9-[4-(phenylethynyl)phenyl]-10-(4-tricyclo[3.3.1.1.3,7]dec-1-ylphenyl)- (9CI) (CA INDEX NAME)



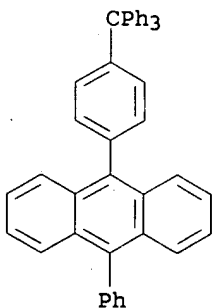
RN 741255-64-1 HCAPLUS

CN Benzonitrile, 4-[10-[4-(9H-carbazol-9-yl)phenyl]-9-anthracenyl]-  
(9CI) (CA INDEX NAME)



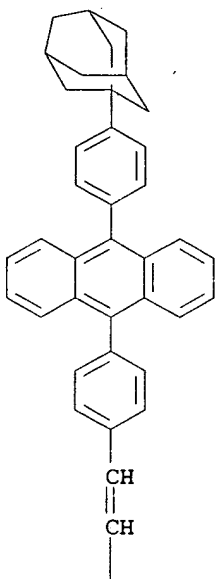
RN 741255-67-4 HCAPLUS

CN Anthracene, 9-phenyl-10-[4-(triphenylmethyl)phenyl]- (9CI) (CA  
INDEX NAME)

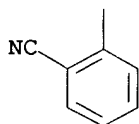


RN 741255-69-6 HCAPLUS  
 CN Benzonitrile, 2-[2-[4-[10-(4-tricyclo[3.3.1.1.3,7]dec-1-ylphenyl)-9-anthracenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

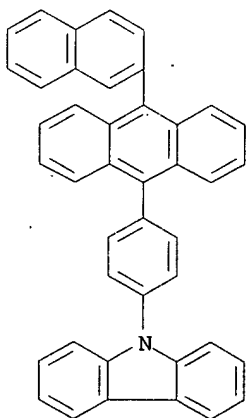
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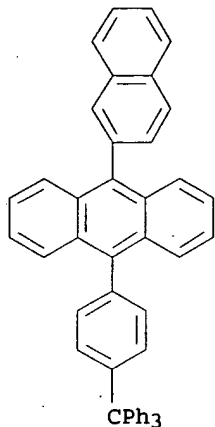
PAGE 2-A



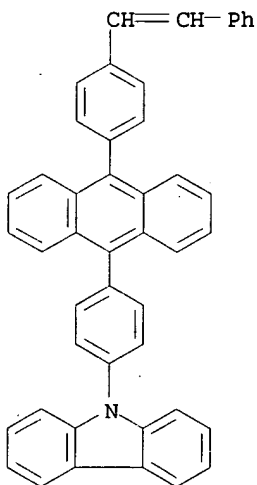
RN 741255-76-5 HCAPLUS  
 CN 9H-Carbazole, 9-[4-[10-(2-naphthalenyl)-9-anthracenyl]phenyl]- (9CI)  
 (CA INDEX NAME)



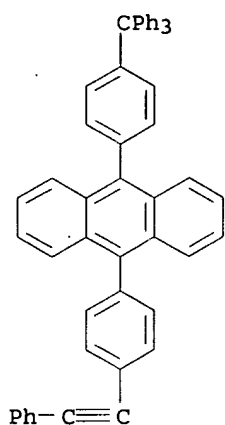
RN 741255-79-8 HCAPLUS  
CN Anthracene, 9-(2-naphthalenyl)-10-[4-(triphenylmethyl)phenyl]- (9CI)  
(CA INDEX NAME)



RN 741255-89-0 HCAPLUS  
CN 9H-Carbazole, 9-[4-[10-[4-(2-phenylethenyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)

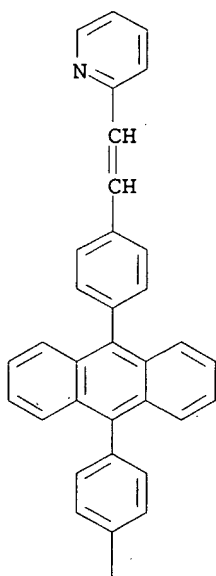


RN 741255-92-5 HCAPLUS  
CN Anthracene, 9-[4-(phenylethynyl)phenyl]-10-[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 741255-95-8 HCAPLUS  
 CN Pyridine, 2-[2-[4-[10-[4-(triphenylmethyl)phenyl]-9-anthracenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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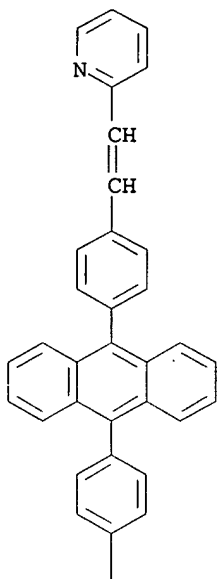


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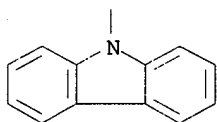


RN 741255-97-0 HCAPLUS  
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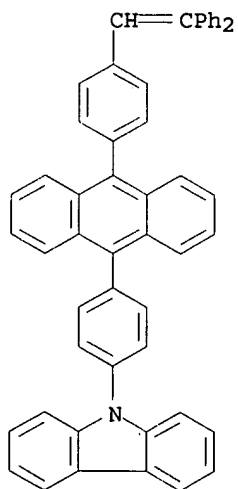
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PAGE 2-A



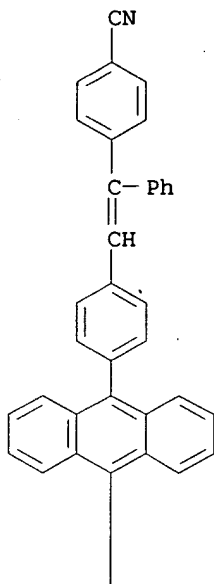
RN 741255-99-2 HCAPLUS  
 CN 9H-Carbazole, 9-[4-[10-[4-(2,2-diphenylethenyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)



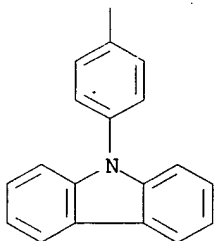
RN 741256-02-0 HCAPLUS  
 CN Benzonitrile, 4-[2-[4-[10-[4-(9H-carbazol-9-yl)phenyl]-9-anthracenyl]phenyl]-2-phenylethenyl]- (9CI) (CA INDEX NAME)

anthracenyl]phenyl]-1-phenylethenyl]- (9CI) (CA INDEX NAME)

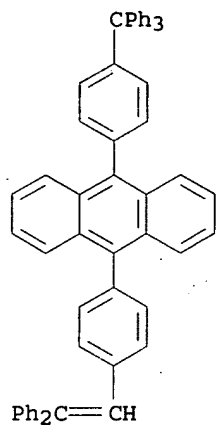
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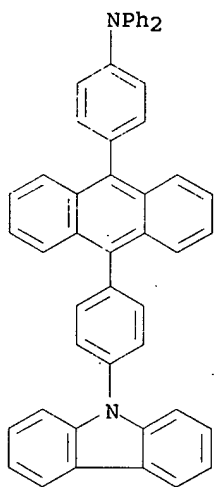
PAGE 2-A



RN 741256-03-1 HCAPLUS  
CN Anthracene, 9-[4-(2,2-diphenylethenyl)phenyl]-10-[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX NAME)

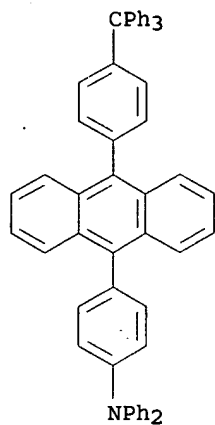


RN 741256-05-3 HCAPLUS  
CN Benzenamine, 4-[10-[4-(9H-carbazol-9-yl)phenyl]-9-anthracenyl]-N,N-diphenyl- (9CI) (CA INDEX NAME)

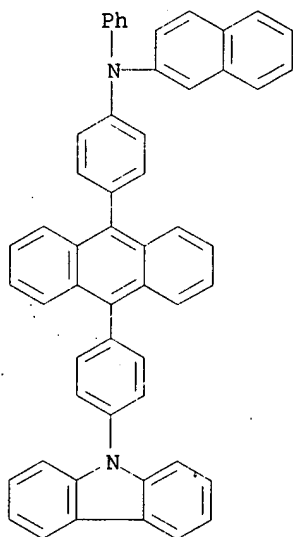


RN 741256-07-5 HCAPLUS  
CN Benzenamine, N,N-diphenyl-4-[10-[4-(triphenylmethyl)phenyl]-9-anthracenyl]- (9CI) (CA INDEX NAME)

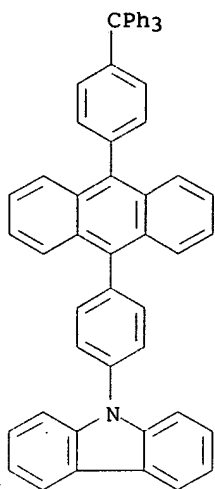




RN 741256-08-6 HCAPLUS  
 CN 2-Naphthalenamine, N-[4-[10-[4-(9H-carbazol-9-yl)phenyl]-9-anthracenyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

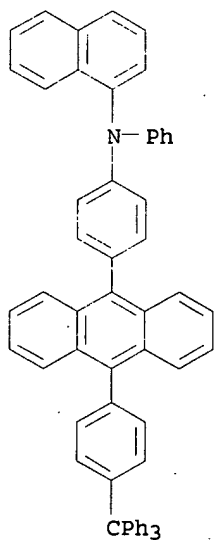


RN 741256-09-7 HCAPLUS  
 CN 9H-Carbazole, 9-[4-[10-[4-(triphenylmethyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)



RN 741256-10-0 HCAPLUS

CN 1-Naphthalenamine, N-phenyl-N-[4-[10-[4-(triphenylmethyl)phenyl]-9-anthracenyl]phenyl]- (9CI) (CA INDEX NAME)



IC ICM H05B033-12

INCL 428690000; 428917000; 313504000; 313506000; 257089000; 427066000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

ST multicolor emitting org **electroluminescent** device hole blocking layer

IT Semiconductor device fabrication

(multicolor-emitting organic **electroluminescent** devices with hole-blocking layers and their fabrication)

IT **Electroluminescent** devices

(organic; multicolor-emitting organic **electroluminescent** devices with hole-blocking layers and their fabrication)

IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 43069-36-9, Anthracene, 9,10-bis([1,1'-biphenyl]-4-yl)- 58328-31-7, CBP (dye) 99372-96-0

122648-99-1 123847-85-8, NPD 186412-15-7 194295-98-2  
 194296-12-3 194296-19-0 343978-79-0 614735-06-7  
 722498-63-7 741255-50-5 741255-51-6  
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 741255-73-2 741255-74-3 741255-75-4 741255-76-5  
 741255-77-6 741255-78-7 741255-79-8 741255-80-1  
 741255-82-3 741255-84-5 741255-86-7 741255-87-8 741255-88-9  
 741255-89-0 741255-90-3 741255-91-4 741255-92-5  
 741255-93-6 741255-94-7 741255-95-8 741255-96-9  
 741255-97-0 741255-98-1 741255-99-2  
 741256-00-8 741256-01-9 741256-02-0 741256-03-1  
 741256-04-2 741256-05-3 741256-06-4 741256-07-5  
 741256-08-6 741256-09-7 741256-10-0

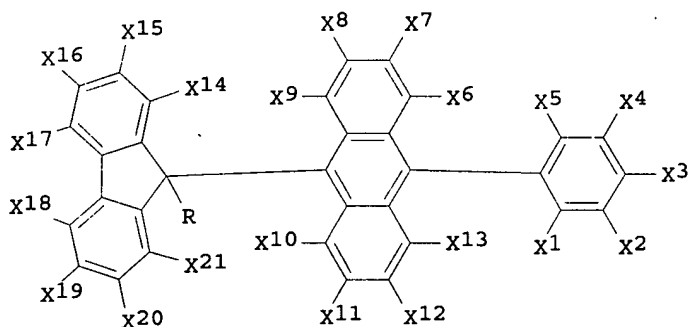
RL: DEV (Device component use); USES (Uses)

(multicolor-emitting organic **electroluminescent** devices  
 with hole-blocking layers and their fabrication)

L104 ANSWER 9 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:651310 Document No. 141:181666 Unsymmetrically substituted  
 anthracenes and their organic **electroluminescent** devices  
 showing long service life. Totani, Yoshiyuki; Tsukada, Hidetaka;  
 Tanabe, Yoshimitsu; Shimamura, Takehiko (Mitsui Chemicals Inc.,  
 Japan). Jpn. Kokai Tokkyo Koho JP 2004224723 A2 20040812, 45 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-13848 20030122.

GI



AB The anthracenes are I (X1-X21 = H, substituent; X1-X21 may form ring  
 with vicinal substituent; R = H, alkyl, aryl). Thus, I (X1-X21 = R  
 = H) was manufactured and used as an emitter layer for an organic  
**electroluminescent** device.

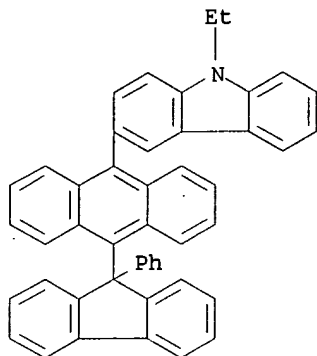
IT 736158-92-2P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)

(manufacture of unsym. substituted anthracenes for organic  
**electroluminescent** devices showing long service life)

RN 736158-92-2 HCAPLUS

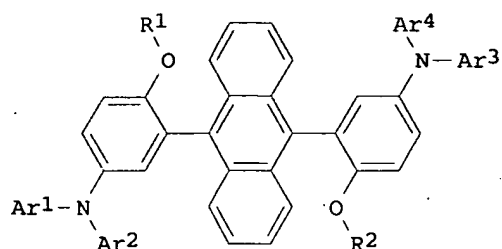
CN 9H-Carbazole, 9-ethyl-3-[10-(9-phenyl-9H-fluoren-9-yl)-9-  
 anthracenyl]- (9CI) (CA INDEX NAME)



IC ICM C07C013-573  
 ICS C07C211-54; C07D209-86; C09K011-06; H05B033-14; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25  
 ST unsym substituted anthracene org **electroluminescent** device; fluorenyl phenyl anthracene org **electroluminescent** device  
 IT Luminescent substances  
 (electroluminescent; manufacture of unsym. substituted anthracenes for organic **electroluminescent** devices showing long service life)  
 IT **Electroluminescent** devices  
 (organic; manufacture of unsym. substituted anthracenes for organic **electroluminescent** devices showing long service life)  
 IT 736158-86-4P 736158-87-5P 736158-88-6P 736158-89-7P  
 736158-90-0P 736158-91-1P 736158-92-2P 736158-93-3P  
 736158-94-4P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (manufacture of unsym. substituted anthracenes for organic **electroluminescent** devices showing long service life)  
 IT 7424-72-8P 23674-20-6P 323195-31-9P 400607-05-8P  
 400607-12-7P 736158-96-6P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (manufacture of unsym. substituted anthracenes for organic **electroluminescent** devices showing long service life)  
 IT 523-27-3, 9,10-Dibromoanthracene 602-55-1, 9-Phenylanthracene  
 1564-64-3, 9-Bromoanthracene 1940-57-4, 9-Bromofluorene  
 4688-76-0 5122-94-1, 4-Phenylphenylboronic acid 32316-92-0,  
 2-Naphthylboronic acid 55135-66-5 201802-67-7 400607-31-0  
 669072-93-9 736158-95-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manufacture of unsym. substituted anthracenes for organic **electroluminescent** devices showing long service life)

L104 ANSWER 10 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2004:609280 Document No. 141:164541 Diphenylanthracene derivative for organic **electroluminescent** device. Lee, Ji Hoon; Lee, Soo Hoon; Sohn, Joon Mo (Samsung SDI Co., Ltd., S. Korea). Jpn. Kokai Tokkyo Koho JP 2004210786 A2 20040729, 34 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2004-681 20040105. PRIORITY: KR 2003-49 20030102.

GI



AB The invention relates to an organic **electroluminescent** device comprising a blue-emitting diphenylanthracene derivative represented by I [R1 and R2 = H, C1-20 alkyl, C5-20 cycloalkyl, etc.; and Ar1-4 = H, C1-20 alkyl, C5-20 cycloalkyl, etc.].

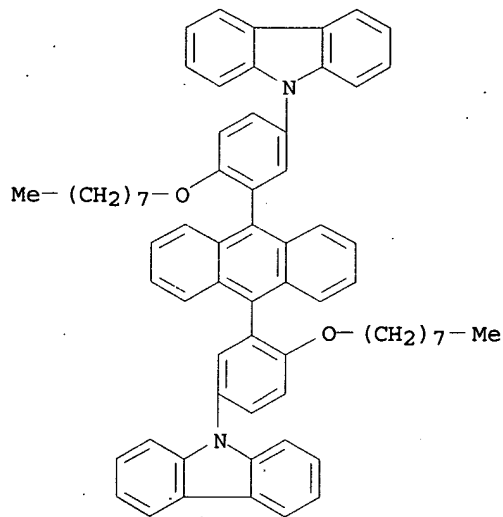
IT 728920-13-6P 728920-15-8P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(blue-emitting diphenylanthracene derivative for organic **electroluminescent** device)

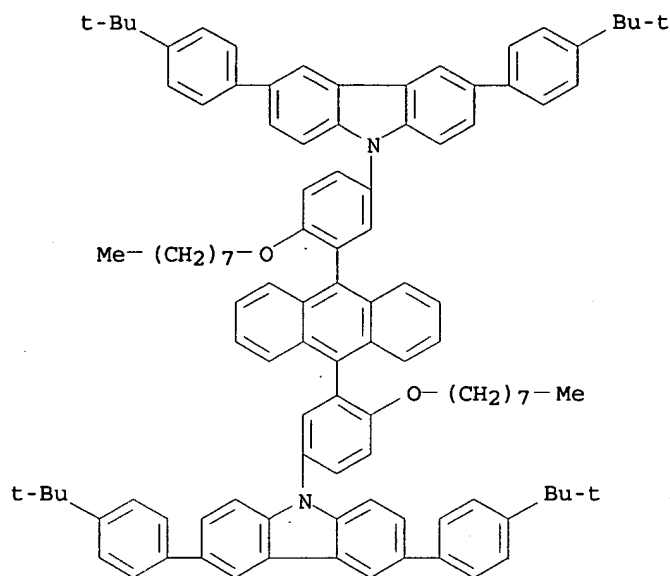
RN 728920-13-6 HCAPLUS

CN 9H-Carbazole, 9,9'-[9,10-anthracenediylbis[4-(octyloxy)-3,1-phenylene]]bis- (9CI) (CA INDEX NAME)



RN 728920-15-8 HCAPLUS

CN 9H-Carbazole, 9,9'-[9,10-anthracenediylbis[4-(octyloxy)-3,1-phenylene]]bis[3,6-bis[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)

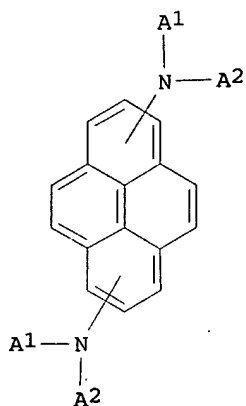


- IC ICM C07C217-92  
ICS C07D209-86; C07D219-02; C07D223-22; C07D265-38; C07D279-22;  
C09K011-06; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25
- ST org **electroluminescent** device diphenylanthracene blue emitting
- IT **Electroluminescent** devices  
(blue-emitting diphenylanthracene derivative for organic **electroluminescent** device)
- IT 728920-13-6P 728920-15-8P 728920-16-9P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(blue-emitting diphenylanthracene derivative for organic **electroluminescent** device)
- IT 86-74-8, 9H-Carbazole 95-56-7, 2-Bromophenol 111-83-1, 1-Bromooctane 122-39-4, N,N-Diphenylamine, reactions 523-27-3, 9,10-Dibromoanthracene 3972-65-4, 1-Bromo-4-tert-butylbenzene 6825-20-3 7726-95-6, Bromine, reactions 24424-99-5 61676-62-8, 2-Isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(blue-emitting diphenylanthracene derivative for organic **electroluminescent** device)
- IT 214360-66-4P 528598-05-2P 528598-06-3P 528893-63-2P 528893-64-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(blue-emitting diphenylanthracene derivative for organic **electroluminescent** device)
- IT 161992-35-4P 728904-28-7P 728920-14-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(blue-emitting diphenylanthracene derivative for organic **electroluminescent** device)

L104 ANSWER 11 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:568210 Document No. 141:131023 Organic **electroluminescent** devices employing blue-emitting dopants based on amine derivatives of pyrene. Seo, Jeong Dae; Lee, Kyung Hoon; Kim, Hee Jung; Park, Chun Gun; Oh, Hyoung Yun (Lg Electronics Inc., S. Korea). Eur. Pat. Appl. EP 1437395 A2 20040714, 43 pp. DESIGNATED STATES: R: AT, BE,

CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT,  
 LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN:  
 EPXXDW. APPLICATION: EP 2003-29661 20031223. PRIORITY: KR  
 2002-83279 20021224; KR 2003-20465 20030401.

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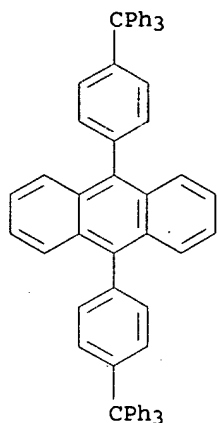
AB Organic electroluminescent devices are described which comprise a substrate; a first and second electrodes formed on the substrate; an emitting layer formed between the first electrode and the second electrode, the emitting layer having a plurality of materials one of which being a blue-emitting dopant with general formula (I), where at least one of A1 and A2 is selected from a substituted or non-substituted aromatic group, a heterocyclic group, an aliphatic group and hydrogen. The materials forming the emitting layer together with the material of I may have a chemical formula B1-X-B2 where X is selected from a group consisting of naphthalene, anthracene, phenanthrene, pyrene, perylene, and quinoline and at least 1 of the B1 and B2 is selected from a group consisting of aryl, alkylaryl, alkoxyaryl, arylaminoaryl and alkylaminoaryl.

IT 722498-63-7

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (light-emitting host; organic  
 electroluminescent devices employing blue-emitting  
 dopants based on amine derivs. of pyrene)

RN 722498-63-7 HCAPLUS

CN Anthracene, 9,10-bis[4-(triphenylmethyl)phenyl]- (9CI) (CA INDEX  
 NAME)



IC ICM C09K011-06  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 22, 25, 76  
 ST org **electroluminescent** device blue dopant pyrene amine deriv **OLED**  
 IT Dopants  
 (blue-emitting; organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)  
 IT Luminescent substances  
 (**electroluminescent**, blue-emitting; organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)  
 IT **Electroluminescent** devices  
 (organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)  
 IT 76656-51-4 143141-30-4 163969-53-7 663954-33-4 668019-96-3  
 722498-76-2 722498-77-3 722498-78-4 722498-79-5 722498-80-8  
 722498-81-9 722498-82-0 722498-83-1 722498-84-2 722498-85-3  
 722498-86-4 722498-87-5 722498-88-6 722498-89-7 722498-90-0  
 722498-91-1 722498-92-2 722498-93-3 722498-94-4 722498-95-5  
 722498-97-7 722498-98-8 722498-99-9 722499-00-5 722499-01-6  
 722499-02-7 722499-03-8 722499-04-9 722499-05-0 722499-06-1  
 722499-07-2 722499-08-3 722499-09-4 722499-10-7 722499-11-8  
 722499-12-9 722499-13-0 722499-14-1 722499-15-2 722499-16-3  
 722499-17-4 722499-18-5 722499-19-6 722499-20-9 722499-21-0  
 722499-22-1 722499-23-2 722499-24-3 722499-25-4 722499-26-5  
 722499-27-6 722499-28-7 722499-29-8 722499-30-1 722499-31-2  
 722499-32-3 722499-33-4 722499-34-5 722499-35-6 722499-36-7  
 722499-37-8 722499-38-9 722499-39-0 722499-40-3 722499-41-4  
 722499-42-5 722499-43-6 722499-44-7 722499-45-8 722499-46-9  
 722499-47-0 722499-48-1 722499-49-2 722499-50-5 722499-51-6  
 722499-52-7 722499-53-8 722499-54-9  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (blue-emitting dopant; organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)  
 IT 722498-96-6  
 RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
 (blue-emitting dopant; organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)  
 IT 722498-52-4P 722498-53-5P 722498-55-7P  
 RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)



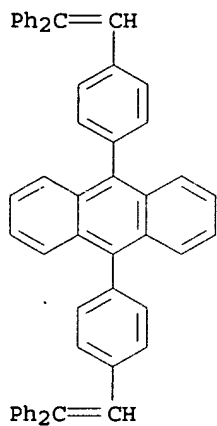
- (blue-emitting dopant; organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)
- IT 188-71-6, Pentabenz[a,de,kl,o,rst]pentaphene 26979-27-1  
 43069-36-9 55009-75-1 331749-28-1 400606-81-7 626236-19-9  
 653599-45-2 653599-46-3 722498-56-8 722498-57-9 722498-58-0  
 722498-59-1 722498-60-4 722498-61-5 722498-62-6 722498-64-8  
 722498-65-9 722498-66-0 722498-67-1 722498-68-2 722498-69-3  
 722498-70-6 722498-71-7 722498-72-8 722498-73-9 722498-74-0  
 722498-75-1  
 RL: DEV (Device component use); USES (Uses)  
 (light-emitting host; organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)
- IT 722498-63-7  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (light-emitting host; organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)
- IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 123847-85-8, NPB  
 RL: DEV (Device component use); USES (Uses)  
 (organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)
- IT 75-77-4, Chlorotrimethylsilane, reactions 106-37-6,  
 1,4-Dibromobenzene 109-04-6, 2-Bromopyridine 122-39-4,  
 Diphenylamine, reactions 129-00-0, Pyrene, reactions 769-92-6,  
 4-tert-Butylphenylamine 6631-37-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)
- IT 6999-03-7P, (4-Bromophenyl)trimethylsilane 27973-29-1P,  
 1,6-Dibromopyrene 722498-51-3P 722498-54-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)
- IT 38303-35-4P, 1,8-Dibromopyrene  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)
- IT 76656-53-6P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (organic **electroluminescent** devices employing blue-emitting dopants based on amine derivs. of pyrene)

L104 ANSWER 12 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

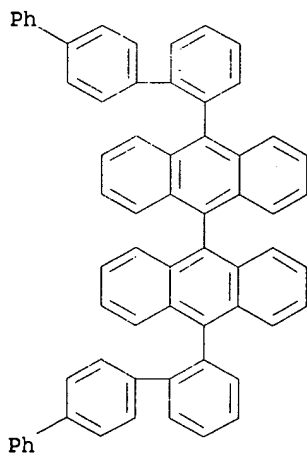
2004:453560 Document No. 141:30841 Organic **electroluminescent** device. Funahashi, Masakazu; Fukuoka, Kenichi; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2004047500 A1 20040603, 52 pp. DESIGNATED STATES: W: CN, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2003-JP14426 20031113. PRIORITY: JP 2002-333865 20021118.

AB The invention relates to an organic **electroluminescent** device comprising a light emitting layer sandwiched between a pair of electrodes, and characterized in that the light emitting layer contains a light emitting layer material, a 1st dopant and a 2nd dopant that satisfy the following relations, i.e.  $EV0 > EV1$  and  $EV0 > EV2$ ;  $EC0 \geq EC2$ ;  $Eg0 > Eg1$ ,  $Eg2$ , where  $EV0$ ,  $EV1$ , and  $EV2$  represent the valence band energy levels of the light emitting layer, the 1st dopant and the 2nd dopant, resp. and likewise  $EC$  and  $Eg$  indicate the conduction band energy level and the band gap energy, resp.

IT 186412-15-7 312497-12-4  
 RL: DEV (Device component use); USES (Uses)  
 (host material; organic electroluminescent device)  
 )  
 RN 186412-15-7 HCAPLUS  
 CN Anthracene, 9,10-bis[4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA  
 INDEX NAME)



RN 312497-12-4 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis([1,1':4',1''-terphenyl]-2-yl)- (9CI)  
 (CA INDEX NAME)



IC ICM H05B033-22  
 ICS H05B033-14  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 ST org electroluminescent device dopant  
 IT Electroluminescent devices  
 (displays; organic electroluminescent device)  
 IT Luminescent screens  
 Luminescent substances  
 (electroluminescent; organic  
 electroluminescent device)  
 IT Electroluminescent devices  
 (organic electroluminescent device)

IT 154853-83-5 279672-58-1 403671-73-8  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (dopant; organic electroluminescent device)

IT 2085-33-8, Al 8q  
 RL: DEV (Device component use); USES (Uses)  
 (electron injection layer; organic electroluminescent device)

IT 209980-53-0  
 RL: DEV (Device component use); USES (Uses)  
 (hole injection layer; organic electroluminescent device)

IT 164724-35-0  
 RL: DEV (Device component use); USES (Uses)  
 (hole transporting layer; organic electroluminescent device)

IT 122648-99-1 186412-15-7 312497-12-4  
 RL: DEV (Device component use); USES (Uses)  
 (host material; organic electroluminescent device)

IT 331965-27-6  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic electroluminescent device)

L104 ANSWER 13 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

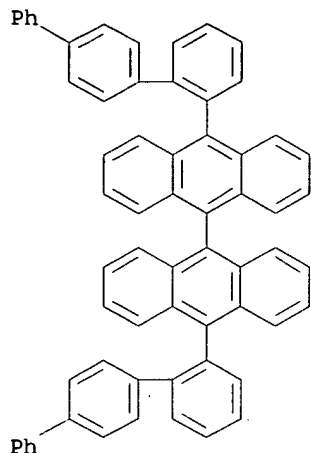
2004:453559 Document No. 141:14295 Organic electroluminescent device. Fukuoka, Kenichi; Matsuura, Masahide; Yamamoto, Hiroshi; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2004047499 A1 20040603, 76 pp. DESIGNATED STATES: W: CN, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2003-JP14425 20031113. PRIORITY: JP 2002-333812 20021118; JP 2003-152276 20030529.

AB The invention relates to an organic electroluminescent device comprising: an anode; a 1st light-emitting layer consisting of at least a 1st host material and a 1st dopant; a 2nd light-emitting layer consisting of at least a 2nd host material and a 2nd dopant; and a cathode, fabricated in the order mentioned. The organic electroluminescent device is characterized in that the energy gap Egh1 of the 1st host material, the energy gap Egd1 of the 1st dopant, the energy gap Egh2 of the 2nd host material and the energy gap Egd2 of the 2nd dopant satisfy the following expressions, i.e.  $E_{gh1} > E_{gd1}$ ,  $E_{gh2} > E_{gd2}$ , and  $E_{gd1} > E_{gd2}$ , and the peak intensity I1 of the emission spectrum derived from the 1st light-emitting layer and the peak intensity I2 of the emission spectrum derived from the 2nd light-emitting layer satisfy the expression  $I1 > 3.5 \times I2$ .

IT 312497-12-4  
 RL: DEV (Device component use); USES (Uses)  
 (host; organic electroluminescent device having double structure electroluminescent layer)

RN 312497-12-4 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis([1,1':4',1''-terphenyl]-2-yl)- (9CI)  
 (CA INDEX NAME)

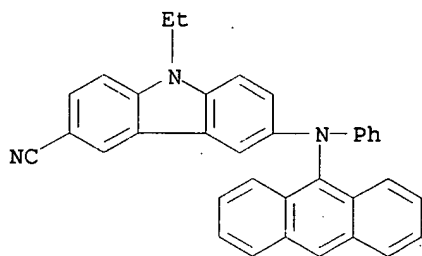


IC ICM H05B033-22  
ICS H05B033-14  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org electroluminescence element dopant  
IT **Electroluminescent devices**  
(organic electroluminescent device having double structure electroluminescent layer)  
IT 154853-83-5 331965-27-6  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(dopant; organic electroluminescent device having double structure electroluminescent layer)  
IT 2085-33-8, A1 8q 641143-96-6  
RL: DEV (Device component use); USES (Uses)  
(electron injecting layer; organic electroluminescent device having double structure electroluminescent layer)  
IT 462631-35-2  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(guest; organic electroluminescent device having double structure electroluminescent layer)  
IT 209980-53-0  
RL: DEV (Device component use); USES (Uses)  
(hole injection layer; organic electroluminescent device having double structure electroluminescent layer)  
IT 164724-35-0  
RL: DEV (Device component use); USES (Uses)  
(hole transporting layer; organic electroluminescent device having double structure electroluminescent layer)  
IT 312497-12-4  
RL: DEV (Device component use); USES (Uses)  
(host; organic electroluminescent device having double structure electroluminescent layer)

L104 ANSWER 14 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:383153 Document No. 141:303400 Cyanocarbazole derivatives for high-performance electroluminescent devices. Thomas, K. R. Justin; Velusamy, Marappan; Lin, Jiann T.; Tao, Yu-Tai; Chuen, Chang-Hao (Institute of Chemistry, Academia Sinica, Taipei, 115, Taiwan). Advanced Functional Materials, 14(4), 387-392 (English)

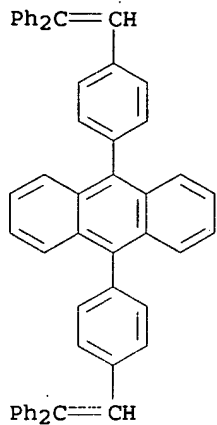
2004. CODEN: AFMDC6. ISSN: 1616-301X. Publisher: Wiley-VCH Verlag GmbH & Co. KGaA.

- AB 3-Cyano-9-(diarylamino)carbazoles have been synthesized. These new compds. emit in the blue to green region. Double-layer **electroluminescent** devices using these compds. as the hole-transport/emitting materials are highly efficient. Two of the compds. can be fabricated into single-layer devices with good performance. Green- and blue-emitting devices with good performance were also fabricated using one of the compds. as the hole-injection layer.
- IT **764654-64-0P**  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (target cyanocarbazole; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- RN 764654-64-0 HCAPLUS
- CN 9H-Carbazole-3-carbonitrile, 6-(9-anthracenylphenylamino)-9-ethyl-(9CI) (CA INDEX NAME)

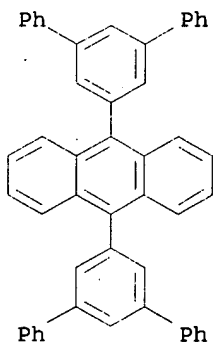


- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST cyanocarbazole **electroluminescent** device
- IT LUMO (molecular orbital)  
 (HOMO gap; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT HOMO (molecular orbital)  
 (LUMO gap; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT Electric current-potential relationship  
**Electroluminescent** devices  
 Fluorescence  
 HOMO (molecular orbital)  
 LUMO (molecular orbital)  
 Luminescence, **electroluminescence**  
 (cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT Luminescent substances  
 (**electroluminescent**; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT Glass transition temperature  
 Oxidation potential  
 UV and visible spectra  
 (of target cyanocarbazoles; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT 57103-00-1, 3-Cyano-9-ethylcarbazole  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (bromination; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT 90-30-2, (1-Naphthyl)phenylamine 3920-79-4, (9-Phenanthryl)phenylamine 15424-38-1, (9-Anthryl)phenylamine 65838-93-9, Phenyl(1-pyrenyl)amine 436800-48-5, (9-Ethyl-3-carbazolyl)phenylamine  
 RL: RCT (Reactant); RACT (Reactant or reagent)

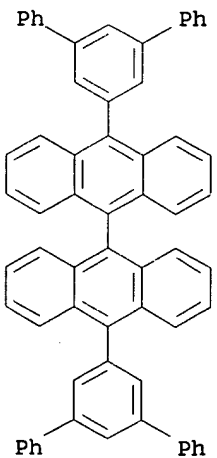
- (catalytic arylation reaction with bromocarbazole derivative; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT 764654-67-3P, 6-Bromo-9-ethyl-9H-carbazole-3-carbonitrile  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (catalytic arylation reaction with diarylamines; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT 2085-33-8, Alq3 50926-11-9, ITO 137948-22-2 192198-85-9, TPBI 474713-51-4, PAP-NPA  
 RL: DEV (Device component use); USES (Uses)  
 (cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT 764654-65-1P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (target cyanocarbazole, ideal for hole injection; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- IT 764654-62-8P 764654-63-9P **764654-64-0P** 764654-66-2P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (target cyanocarbazole; cyanocarbazole derivs. for high-performance **electroluminescent** devices)
- L104 ANSWER 15 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2004:331637 Document No. 140:365374 Organic **light-emitting diode devices** with improved operational stability. Jarikov, Viktor V. (Eastman Kodak Company, USA). U.S. Pat. Appl. Publ. US 2004076853 A1 20040422, 108 pp., Cont.-in-part of U.S. Ser. No. 131,801, abandoned. (English). CODEN: USXXCO. APPLICATION: US 2003-634324 20030805. PRIORITY: US 2002-131801 20020424.
- AB Organic **light-emitting devices** which comprise a substrate; an anode and a cathode disposed over the substrate; a luminescent **layer** disposed between the anode and the cathode are described in which the luminescent **layer** includes a host and  $\geq 1$  dopant; the host including a solid organic material comprising a mixture of  $\geq 2$  components including a **first** component that is an organic compound capable of **transporting** either **electrons** and/or holes and of forming both monomer state and an aggregate state and a **second** component of that is an organic compound that upon mixing with the **first** host component is capable of forming a continuous and substantially pin-hole-free **layer**, while the dopant of is selected to produce light from the **light-emitting device**. The **first** component is capable of forming an aggregate state either in the ground electronic state or in an excited electronic state that results in a different absorption or emission spectrum or both relative to the absorption or emission spectrum or both of the monomer state, resp., or of forming an aggregate state whose presence results in a quantum yield of luminescence of the monomer state being different relative to the quantum yield of luminescence of the monomer state in the absence of the aggregate state. The aggregate state may be crystalline
- IT 186412-15-7 247575-24-2 363609-60-3  
 RL: DEV (Device component use); USES (Uses)  
 (organic **light-emitting diode devices** using luminescent mixts.)
- RN 186412-15-7 HCAPLUS  
 CN Anthracene, 9,10-bis[4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 247575-24-2 HCAPLUS  
CN Anthracene, 9,10-bis([1,1':3',1''-terphenyl]-5'-yl)- (9CI) (CA INDEX NAME)



RN 363609-60-3 HCAPLUS  
CN 9,9'-Bianthracene, 10,10'-bis([1,1':3',1''-terphenyl]-5'-yl)- (9CI) (CA INDEX NAME)



IC ICM. H05B033-14

INCL 428690000; 428917000; 313504000  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25, 27, 28, 76  
ST org light emitting device luminescent mixt  
IT Luminescent substances  
(organic light-emitting diode devices using luminescent mixts.)  
IT Fluorescent dyes  
Phosphorescent substances  
(organic light-emitting diode devices using luminescent mixts. containing)  
IT Electroluminescent devices  
(organic; organic light-emitting diode devices using luminescent mixts.)  
IT 54811-28-8, 2,9-Diphenylcoronene  
RL: DEV (Device component use); USES (Uses)  
(2,9-diphenylcoronene; organic light-emitting diode devices using luminescent mixts.)  
IT 6542-08-1, 8H-Dibenzo[b,mn]phenanthrene  
RL: DEV (Device component use); USES (Uses)  
(8H-dibenzo[b,mn]phenanthrene; organic light-emitting diode devices using luminescent mixts.)  
IT 284673-30-9, CFDMQA  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(CFDMQA; organic light-emitting diode devices using luminescent mixts.)  
IT 51325-95-2, DCJ  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(DCJ; organic light-emitting diode devices using luminescent mixts.)  
IT 159788-00-8, DCJT  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(DCJT; organic light-emitting diode devices using luminescent mixts.)  
IT 463943-63-7, DCJTBz  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(DCJTBz; organic light-emitting diode devices using luminescent mixts.)  
IT 200052-72-8, DCJTE  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(DCJTE; organic light-emitting diode devices using luminescent mixts.)  
IT 213749-94-1, DCJTMes  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(DCJTMes; organic light-emitting diode devices using luminescent mixts.)  
IT 200052-71-7, DCJTP  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(DCJTP; organic light-emitting diode devices using luminescent mixts.)  
IT 19205-19-7, DMQA  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(DMQA; organic light-emitting diode devices using luminescent mixts.)  
IT 682334-88-9, DPMB 1



RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (DPMB 1; organic **light-emitting diode devices** using luminescent mixts.)

IT 682334-89-0, DPMB 2  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (DPMB 2; organic **light-emitting diode devices** using luminescent mixts.)

IT 682334-90-3, DPMB 3  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (DPMB 3; organic **light-emitting diode devices** using luminescent mixts.)

IT 175606-05-0  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (Red 2; organic **light-emitting diode devices** using luminescent mixts.)

IT 616235-15-5  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (Yellow green 2; organic **light-emitting diode devices** using luminescent mixts.)

IT 19770-52-6, Benz[d]aceanthrylene  
 RL: DEV (Device component use); USES (Uses)  
 (benz[d]aceanthrylene; organic **light-emitting diode devices** using luminescent mixts.)

IT 197-67-1, Tetrabenzo[a,fg,ij,ol]pentaphene  
 RL: DEV (Device component use); USES (Uses)  
 (dinaphtho[1,2-b:2',1'-n]perylene; organic **light-emitting diode devices** using luminescent mixts.)

IT 196-28-1, Naphtho[1,2-a]pyrene  
 RL: DEV (Device component use); USES (Uses)  
 (naphtho[1,2-a]pyrene; organic **light-emitting diode devices** using luminescent mixts.)

IT 35699-67-3, Naphtho[8,1,2-ghi]chrysene  
 RL: DEV (Device component use); USES (Uses)  
 (naphtho[1,2-e]pyrene; organic **light-emitting diode devices** using luminescent mixts.)

IT 50-32-8, Benzo[a]pyrene, uses 53-70-3, 1,2 5,6-Benzanthracene  
 56-55-3, Tetraphene 56-55-3D, Tetraphene, derivs. 66-71-7,  
 1,10-Phenanthroline 71-43-2, [6]Annulene, uses 83-32-9,  
 Acenaphthene 85-01-8, Phenanthrene, uses 85-01-8D, Phenanthrene,  
 derivs. 86-73-7, Fluorene 86-74-8, Carbazole 91-20-3,  
 Naphthalene, uses 91-22-5, Quinoline, uses 92-24-0, Naphthacene  
 92-24-0D, Naphthacene, derivs. 92-52-4, Biphenyl, uses 92-82-0,  
 Phenazine 92-83-1, Xanthene 95-13-6, Indene 95-15-8,  
 Benzo[b]thiophene 109-97-7, Pyrrole 110-00-9, Furan 110-02-1,  
 Thiophene 110-86-1, Pyridine, uses 119-65-3, Isoquinoline  
 119-91-5, 2,2'-Biquinoline 120-12-7, Anthracene, uses 120-72-9,  
 Indole, uses 120-73-0, Purine 129-00-0, Pyrene, uses  
 129-00-0D, Pyrene, derivs. 132-64-9, Dibenzofuran 132-65-0,  
 Dibenzothiophene 135-48-8, Pentacene 135-48-8D, Pentacene,  
 derivs. 147-14-8, Copper phthalocyanine 165-39-9,  
 Benzo[k]fluorene 187-83-7, [6]Helicene 187-94-0,  
 3,4,11,12-Dibenzobisanthene 187-95-1, Perylo[3,2,1,12-  
 pqrab]perylene 188-00-1, Dibenzo[fg,ij]phenanthro[9,10,1,2,3-  
 pqrst]pentaphene 188-11-4, Benzo[pqr]dinaphtho[8,1,2-bcd:2',1',8'-  
 lmn]perylene 188-13-6, Tetrabenzo[de,h,kl,rst]pentaphene  
 188-16-9, 2,12-Dioxadibenzo[jk,uv]biscyclopenta[3,4]naphtho[2,1,8,7-  
 defg:2',1',8',7'-opqr]pentacene 188-42-1, Naphthaceno[2,1,12,11-  
 opqra]naphthacene 188-50-1, peri-Naphthacenonaphthacene  
 188-51-2, Benzo[2,1-a:3,4-a']dianthracene 188-52-3,  
 Dibenzo[c,g]phenanthrene 188-67-0, Dibenzo[f,j]picene 188-69-2,

11H-Indeno[1,2-a]triphenylene 188-72-7, Terrylene 188-73-8,  
 Quaterylene 188-84-1, Benzo[rst]phenanthro[10,1,2-cde]pentaphene  
 188-87-4, Anthra[9,1,2-cde]benzo[rst]pentaphene 188-89-6,  
 Naphtho[8,1,2-bcd]perylene 188-90-9, Dinaphtho[2,1,8,7-  
 defg:2',1',8',7'-ijkl]pentaphene 188-91-0, Dinaphtho[2,1,8,7-  
 defg:2',1',8',7'-opqr]pentacene 188-94-3, Periflanthene  
 188-96-5, Peropyrene 188-96-5D, Peropyrene, derivs. 189-01-5,  
 Aceperylene 189-18-4, Benzo[a]naphtho[2,1-h]pyrene 189-52-6,  
 Anthra[2,1,9-qla]naphthacene 189-55-9, Benzo[rst]pentaphene  
 189-64-0, Dibenzo[b,def]chrysene 189-71-9, 8H-Dibenzo[b,fg]pyrene  
 189-73-1, 6H-Naphtho[1,2,3-cd]pyrene 189-96-8, Benzo[pqr]picene  
 190-01-2, Benzo[a]naphtho[8,1,2-lmn]naphthacene 190-05-6,  
 Benzo[a]naphtho[2,1,8-hij]naphthacene 190-12-5,  
 1H-Indeno[6,7,1-mna]anthracene 190-24-9,  
 1.12,2.3,4.5,6.7,8.9,10.11-Hexabenzocoronene 190-24-9D,  
 Hexabenz[bc,ef,hi,kl,no,qr]coronene, derivs. 190-25-0,  
 Tetrabenzo[gh,jk,tu,wx]pyranthrene 190-26-1, Ovalene 190-28-3,  
 Phenanthro[3,4,5,6-bcdef]ovalene 190-31-8, 1.14-Benzobisanthene  
 190-36-3, o-meso-Benzodiantrene 190-39-6, Phenanthro[1,10,9,8-  
 opqra]perylene 190-47-6, Dinaphtho[8,1,2-abc:8',1',2'-jkl]coronene  
 190-55-6, Dibenzo[bc,kl]coronene 190-61-4, 8H-  
 Tribenzo[a,cd,l]pyrene 190-66-9, Dibenzo[a,g]coronene 190-70-5,  
 Benzo[a]coronene 190-70-5D, Benzo[a]coronene, derivs. 190-71-6,  
 Benzo[pqr]naphtho[8,1,2-bcd]perylene 190-72-7,  
 Dibenzo[a,j]coronene 190-74-9, Naphtho[2,3-a]coronene 190-81-8,  
 Tribenzo[b,n,pqr]perylene 190-81-8D, Tribenzo[b,n,pqr]perylene,  
 derivs. 190-84-1, Naphtho[1,2,3,4-ghi]perylene 190-87-4,  
 Benzo[qr]naphtho[2,1,8,7-fghi]pentacene 190-88-5,  
 Benzo[ghi]cyclopenta[cd]perylene 190-89-6, Diphenanthro[5,4,3-  
 abcd:5',4',3'-jklm]perylene 190-90-9, Benzo[rs]dinaphtho[2,1,8,7-  
 klmn:3',2',1',8',7'-vwxyz]hexaphene 190-93-2,  
 Benzo[rst]phenanthro[1,10,9-cde]pentaphene 190-95-4,  
 Dibenzo[b,pqr]perylene 191-03-7, Tetrabenzo[a,f,j,o]perylene  
 191-06-0, Dibenzo[lm,yz]pyranthrene 191-07-1, Coronene  
 191-07-1D, Coronene, derivs. 191-12-8, Benzo[a]pyranthrene  
 191-13-9, Pyranthrene 191-13-9D, Pyranthrene, derivs. 191-20-8,  
 Naphtho[1,2,3,4-rst]pentaphene 191-23-1, Diindeno[1,2,3-  
 cd:1',2',3'-jkl]pyrene 191-24-2, Benzo[ghi]perylene 191-24-2D,  
 Benzo[ghi]perylene, derivs. 191-26-4, Anthanthrene 191-26-4D,  
 Anthanthrene, derivs. 191-29-7, Dibenzo[a,f]perylene 191-30-0,  
 Dibenzo[def,p]chrysene 191-32-2, 2H-Benzo[cd]pyrene 191-33-3,  
 6H-Benzo[cd]pyrene 191-34-4, 5H-Benzo[cd]pyrene 191-35-5,  
 3H-Benzo[cd]pyrene 191-46-8, Dibenzo[a,rst]naphtho[8,1,2-  
 cde]pentaphene 191-48-0, Decacycene 191-53-7,  
 Tetrabenzo[a,cd,j,lm]perylene 191-67-3, Naphtho[1,2-g]chrysene  
 191-68-4, Dibenzo[a,c]triphenylene 191-79-7,  
 Tetrabenzo[de,hi,op,st]pentacene 191-81-1, Dibenzo[a,n]perylene  
 191-82-2, Dinaphtho[2,1-a:2',1'-j]perylene 191-85-5,  
 Benzo[a]perylene 191-87-7, Dibenzo[a,j]perylene 192-11-0,  
 Ceranthrene 192-28-9, Benz[a]acephenanthrylene 192-35-8,  
 Fluoreno[3,2,1,9-defg]chrysene 192-42-7, Isorubicene 192-47-2,  
 Dibenzo[h,rst]pentaphene 192-51-8, Dibenzo[fg,op]naphthacene  
 192-51-8D, Dibenzo[fg,op]naphthacene, derivs. 192-57-4D,  
 Tetrabenzo[fg,lm,uv,abl]heptacene, derivs. 192-58-5,  
 Tetrabenzo[a,c,hi,qr]pentacene 192-58-5D,  
 Tetrabenzo[a,c,hi,qr]pentacene, derivs. 192-65-4,  
 Dibenzo[a,e]pyrene 192-70-1, Benzo[a]naphtho[8,1,2-cde]naphthacene  
 192-77-8, 9H-Benz[4,5]indeno[2,1-c]phenanthrene 192-84-7,  
 9H-Benz[5,6]indeno[2,1-c]phenanthrene 192-87-0,  
 9H-Indeno[2,1-c]phenanthrene 192-89-2, Benz[a]indeno[5,6-  
 g]fluorene 192-97-2, Benzo[e]pyrene 193-09-9,  
 Naphtho[2,3-e]pyrene 193-11-3, Dibenzo[de,uv]pentacene 193-21-5,  
 Acenaphtho[1,2-j]fluoranthene 193-39-5, Indeno[1,2,3-cd]pyrene  
 193-43-1, Indeno[1,2,3-cd]fluoranthene 193-69-1,  
 1H-Benz[fg]aceanthrylene 193-98-6, Naphth[2,1,8-def]isoquinoline  
 194-00-3, Benzo[lmn][3,8]phenanthroline 194-03-6, Thebenidine

194-27-4, 5H-Benz[fg]acenaphthylene 194-45-6, Dinaphtho[1',2':2,3;2'',1'':10,11]perylene 194-58-1, 7H-Dibenzo[c,g]fluorene 194-59-2, 7H-Dibenzo[c,g]carbazole 194-63-8, Dinaphtho[2,1-b:1',2'-d]furan 194-69-4, Benzo[c]chrysene 194-83-2, 7H-Dibenz[a,k]anthracene 194-84-3, 1H-Dibenz[a,k]anthracene 194-85-4, 4H-Dibenz[a,k]anthracene 195-00-6, Anthra[1,2-a]anthracene 195-06-2, Dibenzo[b,g]phenanthrene 195-19-7, Benzo[c]phenanthrene 195-88-0, Anthra[9,1-bc]fluorene 195-90-4, 6H-Cyclopenta[ghi]picene 196-36-1, 11H-Indeno[2,1-a]pyrene 196-42-9, Naphtho[2,3-a]pyrene 196-45-2, Naphtho[2,1,8-uva]pentacene 196-46-3, Naphtho[2,1,8-zya]hexacene 196-52-1, Dibenzo[c,p]chrysene 196-62-3, Dinaphth[2,3-a,2',3'-c]anthracene 196-64-5, Naphtho[2,3-g]chrysene 196-77-0, Benzo[def]cyclopenta[hi]chrysene 196-78-1, Benzo[g]chrysene 196-87-2, 11H-Cyclopenta[a]triphenylene 197-61-5, Rubicene 197-61-5D, Rubicene, derivs. 197-69-3, Dibenzo[b,n]perylene 197-79-5, 13H-Benzo[b]cyclopenta[def]triphenylene 198-08-3, 7H-Indeno[1,2-a]phenanthrene 198-19-6, Indeno[1,2-a]phenalene 198-30-1, 13H-Dibenzo[b,mn]phenanthrene 198-40-3, 4H-Dibenzo[a,de]naphthacene 198-45-8, 4H-Dibenzo[a,de]pentacene 198-46-9, Benzo[de]cyclopent[a]anthracene 198-56-1, Phenaleno[1,2,3-de]quinoline 198-65-2, Benzo[1,2,3-de:4,5,6-d'e']diquinoline 198-88-9, Benzo[1,2-b:3,4-b']bisbenzofuran 198-93-6, Fluoreno[3,4-b]fluorene 198-95-8, 8H-Indeno[1,2-a]anthracene 199-21-3, Benz[a]indeno[1,2-c]fluorene 199-54-2, Benz[e]aceanthrylene 199-95-1, 1H-Benz[de]anthracene 200-63-5, Benzo[fg]cyclopent[a]anthracene 200-71-5, Indeno[2,1-a]phenalene 201-27-4, Naphth[1,2-k]acephenanthrylene 201-42-3, 13H-Acenaphtho[1,8-ab]phenanthrene 201-50-3, 15H-Benz[4,5]indeno[1,2-l]phenanthrene 201-65-0, 13H-Dibenzo[a,c]fluorene 201-72-9, Benz[c]indeno[2,1-a]fluorene 202-03-9, Aceanthrylene 202-33-5, Benz[j]aceanthrylene 202-94-8, 11H-Benz[bc]aceanthrylene 202-98-2, 4H-Cyclopenta[def]chrysene 203-06-5, Anthra[1,2-a]aceanthrylene 203-07-6, Dibenz[a,l]aceanthrylene 203-11-2, Indeno[1,2,3-fg]naphthacene 203-12-3, Benzo[ghi]fluoranthene 203-13-4, Benz[mno]aceanthrylene 203-18-9, Dibenzo[j,l]fluoranthene 203-20-3, 15,16-Benzodehydrocholanthrene 203-21-4, Anthra[2,1-a]aceanthrylene 203-25-8, Dibenzo[b,ghi]fluoranthene 203-33-8, Benz[a]aceanthrylene 203-64-5, Benzo[def]fluorene 203-80-5, Phenalene 204-89-7, 7H-Dibenzo[b,g]fluorene 204-91-1, Dinaphtho[2,1-b:2',3'-d]furan 205-12-9, 7H-Benzo[c]fluorene 205-25-4, 7H-Benzo[c]carbazole 205-82-3, 7,8-Benzfluoranthene 205-83-4, Acenaphth[1,2-a]anthracene 205-97-0, Dibenz[b,k]fluoranthene 205-99-2, 3,4-Benz[e]acephenanthrylene 206-06-4, Dibenz[e,k]acephenanthrylene 206-44-0, Fluoranthene 206-44-0D, Fluoranthene, derivs. 207-02-3, Acenaphtho[1,2-k]fluoranthene 207-08-9, Benzo[k]fluoranthene 207-18-1, Acenaphth[1,2-b]anthracene 207-83-0, 13H-Dibenzo[a,g]fluorene 208-37-7, Benzo[1,2-b:4,5-b']bisbenzofuran 208-96-8, Acenaphthylene 210-65-1, as-Indacene 211-91-6, Benz[l]aceanthrylene 212-41-9, Benz[k]acephenanthrylene 212-54-4, 13H-Indeno[1,2-c]phenanthrene

RL: DEV (Device component use); USES (Uses)

(organic light-emitting diode devices using luminescent mixts.)

IT 213-44-5, Dibenzo[b,n]picene 213-46-7, Picene 213-46-7D, Picene, derivs. 213-51-4, Benzo[h]naphtho[1,2-c]cinnoline 214-13-1, Dinaphtho[1,2-b:1',2'-k]chrysene 214-15-3, Benzo[b]naphtho[1,2-k]chrysene 214-16-4, Anthra[2,1-a]naphthacene 214-17-5, Benzo[b]chrysene 214-63-1, Dibenzo[de,mn]naphthacene 214-91-5, Benzo[h]pentaphene 215-11-2, Phenanthro[9,10-b]triphenylene 215-11-2D, Phenanthro[9,10-b]triphenylene, derivs. 215-12-3, Tetrabenz[a,c,h,j]acridine 215-14-5, Phenanthrazine 215-26-9, Naphtho[1,2-b]triphenylene 215-58-7, Benzo[b]triphenylene 215-58-7D, Benzo[b]triphenylene, derivs. 215-62-3,

Dibenz[a,c]acridine 215-95-2, Tetrabenzo[a,c,j,l]naphthacene  
 215-96-3, Tribenzo[a,c,j]naphthacene 216-00-2,  
 Dibenzo[a,c]naphthacene 216-07-9, Tetrabenzo[a,c,l,n]pentacene  
 216-08-0, Dibenzo[a,c]pentacene 216-48-8, Benz[j]acephenanthrylene  
 216-53-5, 7H-Benzo[h]chrysene 216-54-6, 4H-Benzo[h]chrysene  
 217-37-8, Benzo[c]picene 217-42-5, Benzo[b]picene 217-54-9,  
 Anthraceno[2,1-a]anthracene 217-59-4, Triphenylene 217-59-4D,  
 Triphenylene, derivs. 217-65-2, Dibenzo[f,h]quinoline 217-68-5,  
 Dibenzo[f,h]quinoxaline 217-73-2, Benzo[f][1,10]phenanthroline  
 217-88-9, Pyrido[2,3-f][1,7]phenanthroline 218-01-9, Chrysene  
 218-01-9D, Chrysene, derivs. 218-16-6, Benzo[i]phenanthridine  
 218-38-2, Benzo[c]phenanthridine 219-07-8, 15H-  
 Cyclopenta[a]phenanthrene 219-08-9, 17H-Cyclopenta[a]phenanthrene  
 220-77-9, Naphtho[1,2-b]chrysene 220-78-0, Phenanthro[1,2-  
 b]chrysene 220-82-6, Naphtho[2,1-a]naphthacene 220-97-3,  
 11H-Indeno[2,1-a]phenanthrene 221-15-8, Fluoreno[2,1-a]fluorene  
 222-51-5, Dibenzo[c,m]pentaphene 222-54-8, Benzo[c]pentaphene  
 222-58-2, Naphtho[2,3-c]pentaphene 222-75-3, Heptaphene  
 222-78-6, Hexaphene 222-78-6D, Hexaphene, derivs. 222-81-1,  
 Benzo(p)hexaphene 222-88-8, Cyclopent[i]indeno[5,6-a]anthracene  
 222-93-5, Pentaphene 222-93-5D, Pentaphene, derivs. 223-20-1,  
 Dibenzo[b,j][1,10]phenanthroline 223-31-4, 13H-Indeno[2,1-  
 a]anthracene 223-66-5, Fluoreno[2,3-a]fluorene 224-03-3,  
 8H-Cyclopenta[b]phenanthrene 224-41-9, Dibenz[a,j]anthracene  
 224-42-0, Dibenz[a,j]acridine 224-53-3, Dibenz[c,h]acridine  
 224-56-6, Dibenzo[a,j]phenazine 224-89-5, Naphtho[1,2-g]quinoline  
 225-06-9, Benzo[b]phenanthridine 225-07-0, Dibenzo[c,g]cinnoline  
 225-11-6, Benz[a]acridine 225-51-4, Benz[c]acridine 225-87-6,  
 Benzo[b][1,10]phenanthroline 226-36-8, Dibenz[a,h]acridine  
 226-47-1, Dibenzo[a,h]phenazine 226-78-8, 9H-  
 Benzo[a]cyclopent[i]anthracene 226-86-8, Dibenzo[a,l]naphthacene  
 226-88-0, Benzo[a]naphthacene 226-92-6, Dibenz[a,i]acridine  
 226-98-2, Dibenzo[a,i]phenazine 227-04-3, Dibenzo[a,j]naphthacene  
 227-07-6, Dibenzo[a,n]pentacene 227-09-8, Dibenzo[a,l]pentacene  
 227-50-9, 1H-Cyclopent[a]anthracene 229-15-2, 7H-  
 Benzo[de]pentacene 229-67-4, Benz[f]isoquinoline 229-71-0,  
 Benz[h]isoquinoline 229-87-8, Phenanthridine 230-07-9,  
 4,7-Phenanthroline 230-17-1, Benzo[c]cinnoline 230-45-5,  
 1,9-Phenanthroline 230-46-6, 1,7-Phenanthroline 230-51-3,  
 Benzo[h]-1,6-naphthyridine 232-54-2, 1H-Benz[e]indene 232-55-3,  
 3H-Benz[e]indene 235-91-6, 2H-Cyclopenta[l]phenanthrene  
 235-92-7, 1H-Cyclopenta[l]phenanthrene 236-09-9,  
 Phenanthro[9,10-d]oxazole 238-04-0, Acenaphtho[1,2-b]phenanthrene  
 238-84-6, 11H-Benzo[a]fluorene 239-01-0, 11H-Benzo[a]carbazole  
 239-30-5, Benzo[b]naphtho[2,1-d]furan 239-60-1,  
 13H-Dibenzo[a,i]fluorene 239-64-5, 13H-Dibenzo[a,i]carbazole  
 239-69-0, Dinaphtho[1,2-b:2',1'-d]furan 239-85-0,  
 13H-Dibenzo[a,h]fluorene 239-90-7, Dinaphtho[1,2-b:2',3'-d]furan  
 239-98-5, Benzo[a]pentacene 240-04-0, Benzo[a]hexacene 240-44-8,  
 1H-Benzo[a]cyclopent[h]anthracene 241-28-1, 8H-Indeno[2,1-  
 b]phenanthrene 242-47-7, 12H-Dibenzo[b,h]fluorene 242-51-3,  
 Dinaphtho[2,3-b:2',3'-d]furan 243-17-4, 11H-Benzo[b]fluorene  
 243-42-5, Benzo[b]naphtho[2,3-d]furan 248-83-9,  
 12H-Indeno[1,2-b]phenanthrene 248-93-1, 13H-Indeno[1,2-  
 b]anthracene 250-25-9, Pentalene 253-66-7, Cinnoline 253-69-0,  
 1,7-Naphthyridine 253-72-5, 1,6-Naphthyridine 253-82-7,  
 Quinazoline 254-18-2, Benzoxazine 254-60-4, 1,8-Naphthyridine  
 254-79-5, 1,5-Naphthyridine 257-81-8, Naphtho[2,3-g]quinoline  
 257-89-6, Benz[b]acridine 257-95-4, Dibenzo[b,g][1,8]naphthyridine  
 257-96-5, Dibenzo[b,g][1,5]naphthyridine 257-97-6,  
 Benzo[b]phenazine 258-31-1, Hexacene 258-31-1D, Hexacene,  
 derivs. 258-33-3, Octacene 258-36-6, Nonacene 258-38-8,  
 Heptacene 259-06-3, 1H-Cyclopent[b]anthracene 259-14-3,  
 Anthra[2,3-d]oxazole 260-32-2, Benz[g]isoquinoline 260-36-6,  
 Benzo[g]quinoline 260-38-8, Benzo[g]quinazoline 260-94-6,  
 Acridine 267-21-0, s-Indacene 268-40-6, 1H-Benz[f]indene

270-75-7, Isobenzofuran 270-82-6, Benzo[c]thiophene 271-30-7,  
 Pyrano[3,4-b]pyrrole 271-44-3, Indazole 271-89-6, Benzofuran  
 273-53-0, Benzoxazole 288-13-1, Pyrazole 288-14-2, Isoxazole  
 288-16-4, Isothiazole 288-21-1, 5H-1,2-Oxathiole 288-26-6,  
 1,2-Dithiole 288-32-4, Imidazole, uses 288-37-9,  
 1,2,5-Oxadiazole 288-42-6, Oxazole 288-47-1, Thiazole  
 288-49-3, 5H-1,2,5-Oxathiazole 288-67-5, 1,3-Oxathiole 288-74-4,  
 1,3-Dithiole 288-88-0, 1H-1,2,4-Triazole 288-90-4,  
 1,2,4-Oxadiazole 288-98-2, 3H-1,2,4-Dioxazole 288-99-3,  
 1,3,4-Oxadiazole 289-00-9, 1,2,3,4-Oxatriazole 289-02-1,  
 1,4,2-Dioxazole 289-80-5, Pyridazine 289-95-2, Pyrimidine  
 289-96-3, 1,2,3-Triazine 290-37-9, Pyrazine 290-38-0,  
 1,2,4-Triazine 290-87-9, 1,3,5-Triazine 313-65-5,  
 Dibenzo[ij,rst]phenanthro[9,10,1,2-defg]pentaphene 313-65-5D,  
 derivs. 313-66-6, Naphtho[2,1-a]perylene 313-80-4,  
 Naphtho[2,1,8-def]quinoline 313-97-3, Dibenzo[fg,st]hexacene  
 314-51-2, Dibenzo[a,f]fluoranthene 333-84-6, 1,2,3,5-Oxatriazole  
 385-14-8, Benzo(p)naphtho[1,8,7-ghi]chrysene 477-75-8, Triptycene  
 479-23-2, Cholanthrene 548-35-6 602-15-3 668-30-4,  
 Dibenzo[b,mno]fluoranthene 735-72-8, 2,2'-Biquinazoline  
 1055-23-8, 9,9'-Bianthracene 1065-80-1, Hexabenzocoronene  
 1065-80-1D, Hexabenzocoronene, derivs. 1250-59-5,  
 2,2'-Bianthracene 1254-43-9 2085-33-8, Tris(8-  
 hydroxyquinolinato)aluminum 2828-72-0, Benzo[vwx]hexaphene  
 2997-45-7, Dibenzo[a,e]acephenanthrylene 4430-29-9, Isoviolanthrene  
 4552-79-8 5385-22-8, Dibenzo[b,j]fluoranthene 5385-75-1,  
 Dibenzo[a,e]aceanthrylene 5821-51-2, Corannulene 5834-20-8,  
 3-Phenyldibenzofuran 5869-17-0, Anthra[2,3-a]coronene 5869-30-7,  
 Dibenzo[b,ghi]perylene 5869-31-8, Benzo[uv]naphtho[2,1,8,7-  
 defg]pentacene 6208-20-4, Benzo[cd]naphtho[3,2,1,8-pqra]perylene  
 6232-48-0, Acephenanthrene 6596-37-8, Dibenzo[a,ghi]perylene  
 6596-38-9, Naphtho[5,4,3-abc]coronene 7689-57-8,  
 Benzo[a]pentaphene 11057-45-7, Benzoperylene 11057-45-7D,  
 Benzoperylene, derivs. 11068-27-2, Binaphthyl 13109-47-2,  
 Dibenzo[c,m]picene 13227-55-9, Dibenzo[a,j]difluorene[2,1,9-  
 cde:2',1',9'-lmn]perylene 13354-54-6, Dibenzo[b,tuv]naphtho[2,1-  
 m]picene 13978-85-3, Bis(8-hydroxyquinolinato)zinc 14147-38-7,  
 Dibenzo[de,st]pentacene 14258-76-5, Benzo[st]naphtho[2,1,8,7-  
 defg]pentacene 14406-92-9 14514-42-2, Tris(8-  
 hydroxyquinolinato)indium 14642-34-3, Tris(8-  
 hydroxyquinolinato)gallium 14752-00-2, Tris(4-methyl-8-  
 hydroxyquinolinato)aluminum 14855-54-0 15209-78-6,  
 Dicyclopenta[a,c]naphthacene 15956-38-4, Tris(8-  
 hydroxyquinolinato)scandium 16683-64-0, Cyclopenta[de]naphthacene  
 16683-65-1, Cyclopenta[de]pentacene 16683-71-9,  
 Indeno[7,1-ab]naphthacene 16842-52-7 16914-68-4, Dinaphtho[2,1-c  
 1',2'-g]phenanthrene 17509-71-6, Isotruxene 18417-86-2,  
 Indeno[1,7a-a]phenanthrene 18429-26-0, Benzo[a]naphth[1,2-  
 h]anthracene 19301-88-3, Naphtho[2,1,8-fgh]pentaphene  
 20495-12-9, Naphtho[2,1-c:7,8-c']diphenanthrene 20495-14-1,  
 Diphenanthro[3,4-c:4',3'-g]phenanthrene 20495-15-2,  
 Dinaphth[1,2-a:1',2'-h]anthracene 22176-87-0, Anthra[2,1,9,8-  
 stuva]benzo[op]naphtho[2,1,8,7-hijk]pentacene 22815-17-4,  
 2,3,4-Triphenyl-9,9'-spirobifluorene 22815-21-0,  
 4'-Phenylspiro[fluorene-9,6'-[6H]indeno[1,2-j]fluoranthene]  
 23102-67-2

RL: DEV (Device component use); USES (Uses)  
 (organic light-emitting diode devices  
 using luminescent mixts.)

IT 23992-32-7, 4H-Cyclopenta[def]triphenylene 24754-03-8,  
 Fluorantheno[8,9-b]triphenylene 24930-41-4, Naphth[2,1,8-  
 mno]acridine 24969-55-9, 11,11'-Spirobi[11H-benzo[b]fluorene]  
 24976-60-1, as-Indaceno[2,3-a]phenanthrene 25732-74-5,  
 3,4-Dihydrocyclopenta[cd]pyrene 26140-60-3, Terphenyl 26979-27-1  
 27070-49-1, 1,2,3-Triazole 27208-37-3, Acepyrene 27706-08-7,  
 Benzo[de]cyclopent[b]anthracene 27798-46-5, Benzo[c]naphtho[2,1-

p]chrysene 30777-18-5, Benzo[a]fluorene 30909-04-7,  
 Acenaphtho[1,2-k]cyclopenta[cd]fluoranthene 31124-69-3,  
 Phenanthro[3,4-c]chrysene 31125-12-9, Benzo[ghi]naphtho[1,2-  
 b]perylene 31540-94-0, Benzo[s]picene 31541-02-3,  
 Benzo[h]naphtho[1,2,3,4-rst]pentaphene 31541-07-8,  
 Anthra[1,2,3,4-rst]pentaphene 32881-40-6, Benz[de]indeno[2,1-  
 b]anthracene 34814-80-7D, derivs. 35202-46-1,  
 3,3'-Biisoquinoline 36280-81-6, Tetrabenzo[a,d,j,m]coronene  
 36280-81-6D, Tetrabenzo[a,d,j,m]coronene, derivs. 36474-85-8,  
 Dinaphtho[1,2,3-fg:1',2',3'-qr]pentacene 37736-09-7,  
 1,3,2-Dioxazole 40563-35-7, Dibenz[e,l  
 ]acephenanthrylene 41132-64-3, Diphenaleno[9',1',2':3,4,5:9'',1'',  
 2'':9,10,11]coroneno[1,2-c:7,8-c']difuran 41163-25-1,  
 Circobiphenyl 42126-84-1, 1H-Benzo[cd]fluoranthene 42128-36-9,  
 2,3-(o-Phenylene)pyrene 42315-22-0, 1H-Cyclopenta[a]pyrene  
 42850-69-1, Dibenzo[c,l]chrysene 42851-11-6, Phenanthro[4,3-  
 b]chrysene 51473-13-3, Dibenzo[f,h]quinazoline 51958-76-0,  
 Benzo[rst]phenaleno[1,2,3-de]pentaphene 52191-69-2,  
 2,4'-Biquinoline 52879-10-4, Benzo[rst]naphtho[8,1,2-  
 cde]pentaphene 53086-28-5, Dinaphtho[8,1,2-abc:2',1',8'-  
 klm]coronene 53156-62-0, Benzo[b]naphtho[1,2,3,4-pqr]perylene  
 53156-66-4, Dibenzo[c,g]chrysene 53156-67-5, Dibenzo[b,g]chrysene  
 54961-30-7, Tribenzo[a,hi,mn]naphthacene 56181-09-0,  
 Benzo[rst]dinaphtho[8,1,2-cde:2',1',8'-klm]pentaphene 56663-32-2,  
 1,1'-Bicoronene 56832-73-6, Benzofluoranthene 57387-21-0  
 57789-81-8, Dibenzo[a,ghi]naphtho[2,1,8-cde]perylene 58029-37-1,  
 Naphtho[2,3-c]chrysene 58029-38-2, Dibenzo[b,l]chrysene  
 58029-39-3, Naphtho[1,2-a]naphthacene 58029-40-6,  
 Phenanthro[3,4-a]anthracene 58029-41-7, Benzo[a]naphth[2,1-  
 j]anthracene 58029-42-8, Dibenzo[b,p]chrysene 58029-43-9,  
 Naphtho[2,1-b]chrysene 58029-44-0, Naphtho[2,1-c]chrysene  
 58029-45-1, Benzo[a]picene 58029-46-2, Naphtho[1,2-c]chrysene  
 58029-47-3, Benzo[f]picene 58052-99-6, Dinaphtho[8,1,2-  
 lmn:2',1',8'-gra]naphthacene 58615-36-4, Dibenzopyrene  
 58615-36-4D, Dibenzopyrene, derivs. 59004-71-6,  
 3H-Indeno[2,1,7-cde]pyrene 59004-72-7, 4H-  
 Benzo[def]cyclopenta[mno]chrysene 60021-28-5, 8,8'-Biquinoline  
 60032-75-9, Tribenzo[b,def,p]chrysene 61537-21-1, Sexiphenyl  
 62243-32-7, Phenanthro[2,1-b]chrysene 63218-07-5,  
 Dibenzo[c,i]cyclopenta[a]fluorene 64503-02-2, 1H-  
 Benzo[ghi]cyclopenta[pqr]perylene 65181-78-4, N,N'-Bis(3-  
 methylphenyl)-N,N'-diphenylbenzidine 65256-40-8, Dibenzoperylene  
 65256-40-8D, Dibenzoperylene, derivs. 67017-06-5, Dibenzocoronene  
 67017-06-5D, Dibenzocoronene, derivs. 67017-07-6, Tribenzocoronene  
 67017-07-6D, Tribenzocoronene, derivs. 67665-45-6,  
 9,9'-Spirobi(9H-fluorene)-2,2'-diamine 67665-48-9,  
 9,9'-Spirobi(9H-fluorene)-2,2'-dicarbonitrile 68171-26-6,  
 Dinaphth[1,2-a:2',1'-j]anthracene 70346-75-7,  
 Dibenzo[a,jk]phenanthro[8,9,10,1,2-cdefgh]pyranthrene 72088-81-4,  
 Cyclopent[b]indeno[4,5-g]phenanthrene 72088-82-5,  
 Cyclopent[b]indeno[5,6-g]phenanthrene 72986-34-6,  
 Benzo[def]pyranthrene 73467-76-2, Benzopyrene 73467-76-2D,  
 Benzopyrene, derivs. 74335-56-1, Peri-Pentacenopentacene  
 75449-86-4, Benzo[g]naphtho[8,1,2-abc]coronene 75449-87-5,  
 Phenanthro[1,10,9-abc]coronene 75449-88-6, Benz[a]ovalene  
 75449-89-7, Benz[d]ovalene 75449-90-0, Pyreno[10,1,2-abc]coronene  
 75449-91-1, Acenaphtho[1,2,3-cde]pyrene 75449-92-2,  
 Phenanthro[5,4,3,2-abcde]perylene 75449-94-4,  
 Benzo[lmn]naphtho[2,1,8-gra]perylene 75449-96-6,  
 Dibenz[e,ghi]indeno[1,2,3,4-pqra]perylene 75449-98-8,  
 Benzo[ij]dinaphtho[2,1,8,7-defg:7',8',1',2',3'-pqrst]pentaphene  
 75449-99-9, Benzo[m]naphtho[8,1,2-abc]coronene 75450-00-9,  
 Benzo[p]naphtho[8,1,2-abc]coronene 75459-00-6,  
 Benzo[j]naphtho[8,1,2-abc]coronene 75459-01-7,  
 Phenanthro[10,1,2-abc]coronene 75459-02-8, Dinaphtho[8,1,2-  
 abc:8',1',2'-ghi]coronene 75459-03-9 75459-04-0,

Pyreno[1,10,9-abc]coronene 75459-05-1, Benzo[qr]naphtho[3,2,1,8-defg]chrysene 75459-08-4, Dibenz[a,cd]naphtho[8,1,2,3-fghi]perylene 75459-09-5, Dibenz[ij,rst]naphtho[2,1,8,7-defg]pentaphene 75519-75-4, Naphth[2,1-a]aceanthrylene 75769-05-0, Dibenz[de,gh][1,10]phenanthroline 76727-41-8, Benz[5,6]indeno[2,1-a]phenalene 76748-63-5, Circumanthracene 76748-64-6, Diphenaleno[4,3,2,1,9-hijklm:4',3',2',1',9'-tuvvxa]rubicene 76759-99-4, Dibenz[mn,qr]fluoreno[2,1,9,8,7-defghi]naphthacene 77147-27-4, Tribenzo[a,jk,v]phenanthro[8,9,10,1,2-cdefgh]pyranthrene 80277-95-8, Phenanthro[9,10-b]chrysene 80455-52-3, Cyclopentaphenanthrene 81965-54-0, Dibenz[hi,op]dinaphtho[8,1,2-cde:2',1',8'-uva]pentacene 82453-25-6, 3,3'-Bicinnoline 82628-46-4, Dibenz[b,m]picene 83786-06-5, Dibenz[de,kl]pentaphene 84030-79-5, Dibenz[a,k]fluoranthene 85903-97-5, Benz[de]isoquino[1,8-gh]quinoline 90207-46-8, Dicyclopenta[a,j]coronene 91374-35-5, Naphth[2,1,8-uva]ovalene 92411-20-6, Tribenzo[a,cd,lm]perylene 92586-98-6, Anthra[2,1,9,8-opqra]naphthacene 93122-98-6, Dibenz[j,lm]naphtho[1,8-ab]perylene 93289-29-3, Benzo[a]heptacene 95690-49-6, Benz[l]acephenanthrylene 96204-29-4, Dibenz[o,rst]dinaphtho[2,1-a:8',1',2'-cde]pentaphene 96204-30-7, Dibenz[a,rst]benzo[5,6]phenanthro[9,10,1-klm]pentaphene 96915-18-3, Indeno[5,6,7,1-pqra]perylene 96915-19-4, Benz[mno]indeno[5,6,7,1-defg]chrysene 96915-20-7, Dibenz[def,mno]cyclopenta[hi]chrysene 96915-21-8, Benz[mno]indeno[1,7,6,5-cdef]chrysene 97083-12-0 97269-75-5D, Tribenzo[fgh,pqr,zalbi]trinaphthylene, derivs. 97938-05-1, Benzo[lm]naphtho[1,8-ab]perylene 98570-53-7, Dicoronylene 98570-54-8, Cyclopenta[1,2-a:3,4,5-b'c']dicoronene 100684-90-0, Benzo[pqr]naphtho[2,1,8-def]picene 101686-49-1, Indeno[1,2,3-cd]perylene 102634-38-8, Benz[b]indeno[2,1-h]fluorene 102634-40-2, Fluoreno[3,2-b]fluorene 105442-96-4, Dibenz[def,i]naphtho[8,1,2-vwx]pyranthrene 105786-27-4, Benzo[ij]naphtho[2,1,8,7-defg]pentaphene 106404-28-8, Naphth[1',2':5,6]indeno[1,2,3-cd]pyrene 106404-29-9, Naphth[2',1':4,5]indeno[1,2,3-cd]pyrene 108189-73-7D, derivs. 108650-10-8, Tribenzo[c,g,mno]chrysene 109278-08-2, Benzo[lm]phenanthro[5,4,3-abcd]perylene 109278-09-3, Dibenz[cd,n]naphtho[3,2,1,8-pqra]perylene 109278-10-6, Tetrabenzo[a,cd,f,lm]perylene 109587-09-9, 1H-Cyclopenta[e]pyrene 109587-16-8, Tetrabenzo[a,c,hi,mn]naphthacene 109587-17-9, Tetrabenzo[de,jk,op,uv]pentacene 110789-63-4, Dibenz[fgh,pqr]trinaphthylene 111189-32-3, Indeno[1,2,3-hi]chrysene 111189-33-4, Benz[def]indeno[1,2,3-hi]chrysene 111189-34-5, Benz[def]indeno[1,2,3-qr]chrysene 111381-82-9, Phenanthro[2,1-f]picene 111728-58-6, Benzo[pqr]naphtho[8,1,2-cde]picene 112498-94-9, Benzo[a]naphtho[1,2-j]naphthacene 112498-95-0, Phenanthro[3,4-b]triphenylene 112498-96-1, Benzo[a]naphtho[1,2-l]naphthacene 112498-97-2, Benzo[a]naphtho[2,1-j]naphthacene 113779-16-1, Benzo[l]cyclopenta[cd]pyrene 115697-03-5D, Pentabenzo[fg,ij,o,q,vwx]hexaphene, derivs. 115697-04-6D, derivs. 115697-10-4 115697-12-6, Benzo[m]diphenanthro[1,10,9-abc:1',10',9'-ghi]coronene 115697-46-6D, derivs. 115712-69-1D, derivs. 115747-36-9, Dibenz[a,f]picene 115747-37-0, Dibenz[a,c]pentaphene 115747-38-1, Dibenz[a,h]pentaphene 115747-39-2, Dibenz[c,h]pentaphene 115747-40-5, Phenanthro[2,3-g]chrysene 115747-41-6, Phenanthro[3,2-g]chrysene 115747-42-7, Benzo[l]naphtho[1,2-b]chrysene 115747-43-8, Naphtho[2,1-c]picene 115747-44-9, Benzo[c]naphtho[2,3-l]chrysene 115747-45-0, Benzo[a]naphtho[1,2-c]naphthacene 115747-46-1, Tribenzo[b,g,k]chrysene 115747-47-2, Tribenzo[b,g,l]chrysene 115747-48-3, Dibenz[b,j]picene 115747-49-4, Naphtho[1,2-f]picene 115747-50-7, Dibenz[c,s]picene 115747-51-8, Naphtho[2,1-a]picene 115747-52-9, Benzo[c]naphtho[1,2-l]chrysene 115747-53-0, Benzo[l]naphtho[2,1-b]chrysene 115747-54-1, Dibenz[a,j]picene

115747-55-2, Benzo(p)naphtho[1,2-b]chrysene 115747-56-3,  
 Benzo(p)naphtho[2,1-b]chrysene 115747-57-4, Benzo[g]naphtho[2,1-  
 b]chrysene 115747-58-5, Naphtho[2,3-a]picene 115747-59-6,  
 Anthra[1,2-a]benz[j]anthracene 115747-60-9, Dibenzo[a,o]pentaphene  
 115747-61-0, Phenanthro[2,3-c]chrysene 115747-62-1,  
 Dibenzo[a,n]picene 115747-63-2, Phenanthro[1,2-a]naphthacene  
 115747-64-3, Naphtho[1,2-h]pentaphene 115747-65-4,  
 Benzo[b]naphtho[2,3-g]chrysene 115747-66-5, Naphtho[2,3-s]picene  
 115747-67-6, Benzo[b]naphtho[2,1-p]chrysene 115747-68-7,  
 Dibenzo[b,f]picene 115747-69-8, Benzo[b]naphtho[2,1-g]chrysene  
 115747-70-1, Dibenzo[a,c]picene 115747-71-2, Benzo[b]naphtho[2,3-  
 l]chrysene 115747-72-3, Dibenzo[f,s]picene 115747-73-4,  
 Naphtho[2,3-a]pentaphene 115747-74-5, Benzo[q]hexaphene  
 115747-75-6, Naphtho[2,3-b]picene 115747-76-7, Benzo(o)hexaphene  
 115747-77-8, Tribenzo[b,g,p]chrysene 115747-78-9,  
 Anthra[1,2-a]naphthacene 115747-79-0, Benzo[a]hexaphene  
 115747-80-3, Naphtho[1,2-c]pentaphene 115747-81-4,  
 Naphtho[2,1-b]picene 115747-82-5, Naphtho[1,2-b]picene  
 115747-83-6, Dibenzo[a,m]pentaphene 115747-84-7,  
 Phenanthro[3,4-b]chrysene 115747-85-8, Naphtho[1,2-a]pentaphene  
 115747-86-9, Naphtho[2,1-a]pentaphene 115747-87-0,  
 Benzo[a]naphtho[2,1-l]naphthacene 115747-88-1, Dibenzo[b,s]picene  
 115747-89-2, Phenanthro[3,4-a]naphthacene 115747-90-5,  
 Benzo[b]naphtho[1,2-l]chrysene 115747-91-6, Benzo[b]naphtho[2,1-  
 k]chrysene 115747-92-7, Benzo[c]hexaphene 115747-93-8,  
 Dibenzo[a,o]picene 115791-73-6, Phenanthro[9,10-a]naphthacene  
 115791-74-7, Naphtho[1,2-a]pentacene 115791-75-8,  
 Naphtho[2,1-c]pentaphene 117440-50-3, Tribenzo[a,f,j]perylene  
 117726-80-4, Dibenzo[j,lm]phenanthro[5,4,3-abcd]perylene  
 117726-81-5, Dibenzo[rs,vwx]naphtho[2,1,8,7-klmn]hexaphene  
 117726-82-6

RL: DEV (Device component use); USES (Uses)

(organic light-emitting diode devices  
 using luminescent mixts.)

IT 117726-83-7, Benz[4,10]anthra[1,9,8-abcd]coronene 117726-84-8,  
 Dibenzo[fg,ij]naphtho[2,1,8-uva]pentaphene 117740-28-0,  
 Benzo[rst]pyreno[1,10,9-cde]pentaphene 119000-35-0,  
 Pyreno[2,1-b]picene 119000-37-2, Chryseno[2,1-b]picene  
 119000-39-4, Dibenzo[q,vwx]hexaphene 119000-41-8,  
 Benzo[c]naphtho[2,1-m]pentaphene 119000-43-0, Dinaphtho[2,1-  
 a:2',1'-j]naphthacene 119123-34-1, Benzo[6,7]phenanthro[4,3-  
 b]chrysene 119123-35-2, Benzo[tuv]naphtho[2,1-b]picene  
 119123-36-3, Naphtho[7,8,1,2,3-tuvwx]hexaphene 120835-39-4,  
 Naphtho[2,1,8-def]picene 120835-40-7, Dibenzo[a,pqr]picene  
 120835-41-8, Naphtho[1,2-b]perylene 120835-43-0,  
 Naphtho[2,1-b]perylene 120835-44-1, Dibenzo[c,pqr]picene  
 120835-45-2, Benzo[de]naphtho[3,2,1-mn]naphthacene 120835-46-3,  
 Dibenzo[de,ij]pentaphene 120835-48-5, Dibenzo[de,uv]pentaphene  
 120835-49-6, Benzo[mno]naphtho[1,2-c]chrysene 120835-50-9,  
 Naphtho[8,1,2-cde]pentaphene 120835-51-0, Dibenzo[a,rst]pentaphene  
 120835-52-1, Dibenzo[c,rst]pentaphene 120835-53-2,  
 Dibenzo[de,qr]pentacene 120835-54-3, Phenanthro[9,10,1-  
 gra]naphthacene 120835-55-4, Naphtho[7,8,1,2,3-pqrst]pentaphene  
 120835-56-5, Benzo[pqr]naphtho[2,1-b]perylene 120835-57-6,  
 Benzo[pqr]naphtho[1,2-b]perylene 120835-58-7, Phenanthro[1,2,3,4-  
 ghi]perylene 120835-59-8, Benzo[ghi]naphtho[2,1-a]perylene  
 120835-60-1, Tribenzo[a,e,ghi]perylene 120835-61-2,  
 Dibenzo[b,qr]naphtho[3,2,1,8-defg]chrysene 120835-62-3,  
 Tribenzo[b,e,ghi]perylene 120835-63-4, Benzo[ghi]naphtho[2,1-  
 b]perylene 120835-64-5, Benzo[rst]naphtho[2,1,8-fgh]pentaphene  
 120835-65-6, Tribenzo[de,ij,rst]pentaphene 120835-66-7,  
 Benzo[a]naphtho[2,1,8-cde]perylene 120835-67-8,  
 Benzo[qr]naphtho[2,1,8,7-defg]pentacene 120835-69-0,  
 Benzo[h]naphtho[7,8,1,2,3-pqrst]pentaphene 120835-70-3,  
 Benzo[kl]naphtho[2,1,8,7-defg]pentaphene 120835-71-4,  
 Benzo[a]naphtho[2,1,8-lmn]perylene 120835-72-5,



Dibenzo[c,hi]naphtho[3,2,1,8-mnop]chrysene 120835-73-6,  
 Benzo[a]naphtho[8,1,2-klm]perylene 120835-74-7,  
 Benzo[de]naphtho[8,1,2,3-stuv]picene 120835-75-8,  
 Tribenzo[a,ghi,k]perylene 120835-76-9, Benzo[a]naphtho[1,2,3,4-  
 ghi]perylene 120835-77-0, Anthra[2,1,9,8-defgh]pentaphene  
 120835-78-1, Benzo[a]naphtho[7,8,1,2,3-pqrst]pentaphene  
 120835-79-2, Phenanthro[9,10,1,2,3-pqrst]pentaphene 120835-80-5,  
 Benzo[c]naphtho[7,8,1,2,3-pqrst]pentaphene 120835-81-6,  
 Phenanthro[2,3,4,5-tuvab]picene 120835-82-7, Anthra[8,9,1,2-  
 cdefg]benzo[a]naphthacene 120835-83-8, Benzo[de]naphtho[2,1,8,7-  
 qrst]pentacene 120835-85-0, Naphtho[3,2,1,8,7-vwxyz]hexaphene  
 120835-86-1, Benzo[uv]naphtho[2,1,8,7-defg]pentaphene 120835-87-2,  
 Anthra[8,9,1,2-lmnop]benzo[a]naphthacene 120835-88-3,  
 Anthra[2,1,9,8-stuva]pentacene 120835-89-4, Dibenzo[a,d]coronene  
 120835-90-7, Naphtho[1,2-a]coronene 120835-91-8,  
 Dibenzo[fg,ij]naphtho[7,8,1,2,3-pqrst]pentaphene 120835-92-9,  
 Dibenzo[de,ij]naphtho[3,2,1,8,7-rstuv]pentaphene 120835-93-0,  
 Dinaphtho[2,1,8-fgh:3',2',1',8',7'-rstuv]pentaphene 120835-94-1,  
 Dinaphtho[2,1,8,7-defg:2',1',8',7'-qrst]pentacene 120835-95-2,  
 Dinaphtho[1,8-ab:8',1',2',3'-fghi]perylene 120835-96-3  
 120835-97-4, Dinaphtho[8,1,2-cde:7',8',1',2',3'-pqrst]pentaphene  
 120835-98-5, Dinaphtho[2,1,8-fgh:7',8',1',2',3'-pqrst]pentaphene  
 120835-99-6, Benzo[e]phenanthro[1,10,9,8-opqra]perylene  
 120836-00-2, Dibenzo[de,ij]naphtho[7,8,1,2,3-pqrst]pentaphene  
 120836-01-3, Anthra[2,1,9,8-defgh]benzo[rst]pentaphene  
 120836-02-4, Dibenzo[cd,k]naphtho[3,2,1,8-pqra]perylene  
 120836-03-5, Dibenzo[a,ghi]naphtho[8,1,2-klm]perylene 120836-04-6,  
 Dibenzo[a,ghi]naphtho[2,1,8-lmn]perylene 120836-05-7,  
 Dibenzo[ghi,n]naphtho[8,1,2-bcd]perylene 120836-06-8,  
 Benzo[e]phenanthro[2,3,4,5-pqrab]perylene 120836-08-0,  
 Anthra[2,1,9,8,7-defghi]benzo[st]pentacene 120836-11-5,  
 Pyreno[5,4,3,2,1-pqrst]pentaphene 120836-12-6 120836-13-7,  
 Anthra[2,1,9,8,7-defghi]benzo[uv]pentacene 120836-14-8,  
 Anthra[7,8,9,1,2,3-rstuvw]hexaphene 120836-16-0,  
 Anthra[3,2,1,9,8-rstuvab]benzo[ij]pentaphene 120836-17-1  
 120836-18-2, Anthra[3,2,1,9-pqra]benzo[cd]perylene 120864-21-3,  
 Anthra[9,1,2-bcd]perylene 120864-22-4,  
 Dibenzo[kl,rst]naphtho[2,1,8,7-defg]pentaphene 120864-23-5,  
 Dibenzo[ghi,lm]naphtho[1,8-ab]perylene 120864-24-6,  
 Anthra[2,1,9,8,7-defghi]benzo[op]pentacene 121159-18-0,  
 Naphtho[2,1,8-uva]pentaphene 122648-99-1 122677-68-3,  
 Dinaphtho[8,1,2-abc:2',1',8'-efg]coronene 122961-15-3,  
 Benzo[j]benzo[2,1-a:3,4-a']dianthracene 123178-01-8D, derivs.  
 123178-24-5D, derivs. 123795-83-5, Dinaphtho[2,1,8-jkl:2',1',8'-  
 uva]pentacene 123847-85-8 125229-51-8 126762-84-3,  
 Dinaphtho[2,1-a:1',2'-l]naphthacene 126762-86-5,  
 Dinaphtho[2,1,8,7-hijk:2',1',8',7'-wxyz]heptacene 127543-08-2,  
 1H-Tribenzo[fg,jk,uv]hexacene 128345-67-5,  
 Tribenzo[a,hi,kl]coronene 128345-68-6, Tribenzo[a,ef,no]coronene  
 128345-69-7, Benzo[bc]naphtho[3,2,1-ef]coronene 128345-70-0,  
 Tribenzo[a,ef,hi]coronene 128345-71-1, Naphtho[3,2,1,8,7-  
 defgh]pyranthrene 128345-72-2, Benzo[bc]naphtho[1,2,3-ef]coronene  
 128345-73-3, Anthra[9,1,2-abc]coronene 128345-74-4,  
 Dinaphtho[8,1,2-abc:2',1',8'-hij]coronene 128345-75-5,  
 Dibenzo[kl,no]naphtho[8,1,2-abc]coronene 128345-76-6,  
 Benzo[ef]phenaleno[9,1,2-abc]coronene 128345-77-7,  
 Dibenzo[hi,kl]naphtho[8,1,2-abc]coronene 128345-78-8,  
 Anthra[1,9,8-abcd]benzo[hi]coronene 128345-79-9,  
 Benzo[qrs]naphtho[3,2,1,8,7-defgh]pyranthrene 128345-80-2,  
 Tetrabenzo[bc,ef,kl,no]coronene 128366-79-0,  
 Tetrabenzo[bc,ef,hi,kl]coronene 128395-02-8, Dinaphtho[8,1,2-  
 abc:2',1',8'-nop]coronene 128395-03-9, Dibenzo[ef,hi]naphtho[8,1,2-  
 abc]coronene 128515-16-2, Dibenzo[ef,no]naphtho[8,1,2-abc]coronene  
 128720-98-9, Dinaphtho[1,2,3-fg:3',2',1'-qr]pentacene 128720-99-0,  
 Dinaphtho[3,2,1-fg:1',2',3'-ij]pentaphene 128721-00-6,  
 Dinaphtho[3,2,1-fg:3',2',1'-qr]pentacene 128721-01-7,

Tetrabenzo[a,e,j,o]perylene 128721-02-8, Dinaphtho[1,8-bc:1',8'-mn]picene 128746-59-8, Tetrabenzo[a,f,k,n]perylene 131238-65-8, Fluoreno[4,3-c]fluorene 133156-50-0, Dibenzo[f,j]naphtho[1,2,3,4-pqr]picene 133156-51-1, Dibenzo[fg,ij]benzo[9,10]pyreno[5,4,3,2,1-pqrst]pentaphene 133156-52-2, Dibenzo[fg,ij]triphenylene[1,2,3,4-rst]pentaphene 133979-16-5, Dinaphtho[2,3-c:2',3'-m]pentaphene 136276-45-4, Fluoreno[9,1-ab]triphenylene 136739-74-7, 137570-57-1, Benzo[mno]naphtho[2,1-c]chrysene 137570-58-2, Phenanthro[1,2,3,4-def]chrysene 137570-59-3, Benzo[fg]naphtho[1,2,3-op]naphthacene 137570-60-6, Benzo[c]naphtho[8,1,2-ghi]chrysene 137593-96-5, Benzo[b]naphtho[8,1,2-pqr]chrysene 137593-97-6, Dibenzo[pq,uv]pentaphene 141046-06-2, 13H-Dibenz[bc,l]aceanthrylene 141046-07-3, 4H-Benzo[b]cyclopenta[mno]chrysene 143214-92-0, Naphthopyrene 143214-92-0D, Naphthopyrene, derivs. 143255-65-6, 4H-Benzo[c]cyclopenta[mno]chrysene 143255-67-8, 13H-Indeno[2,1,7-gra]naphthacene 143255-68-9, 4H-Benzo[b]cyclopenta[jkl]triphenylene 148292-86-8, Indeno[1,7-ab]chrysene 148896-39-3, Bis[10-hydroxybenzo[h]quinolinato]beryllium 149054-17-1, 13H-Cyclopenta[rst]pentaphene 149054-18-2, 5H-Benzo[b]cyclopenta[def]chrysene 151841-51-9 151841-51-9D, derivs. 153043-81-3, Indeno[1,7,6,5-cdef]chrysene 153043-82-4, Benzo[def]cyclopenta[qr]chrysene 155121-10-1, Pentaleno[1,2-b:4,5-b']dinaphthalene 158782-55-9, Tetrabenzo[fg,ij,pq,uv]pentaphene 171408-92-7 172285-72-2 181270-04-2, Indeno[5,6,7,1-defg]chrysene 182631-29-4 186412-15-7 188882-34-0, 8H-Benzo(p)cyclopenta[def]chrysene 196311-56-5D, derivs. 200950-04-5, 7H-Indeno[1,2-a]pyrene 210487-02-8 210487-03-9 210487-04-0 216066-66-9 216066-70-5 218629-56-2D, derivs. 239127-66-3, Naphtho[2,3-f][1,10]phenanthroline 247575-24-2 249288-56-0 249512-71-8 274905-73-6 331856-51-0 363609-60-3 374592-88-8 374592-94-6 405880-13-9 405880-29-7 405881-79-0 405881-98-3 460347-68-6 462104-51-4 473906-55-7 474084-24-7 474353-08-7, 3H-1,2,3-Dioxazole 474918-41-7 478799-51-8 478799-69-8 497157-27-4 503307-40-2 503307-41-3 503624-47-3 682331-02-8 682331-03-9 682331-04-0D, Benzo[g]phenanthro[1,10,9-abc]coronene, derivs. 682331-05-1D, derivs. 682331-06-2D, derivs. 682334-86-7 682334-87-8

RL: DEV (Device component use); USES (Uses)

(organic light-emitting diode devices  
using luminescent mixts.)

IT 197-70-6, Benzo[b]perylene 197-74-0, Dibenzo[b,k]perylene 198-55-0, Perylene 517-51-1, 5,6,11,12-Tetraphenylnaphthacene 1047-16-1, Quinacridone 38215-36-0, Coumarin 6 51325-91-8, DCM 55035-42-2, 4-Diphenylamino)-4'-[4-(diphenylamino)styryl]stilbene 55035-43-3, 4-(Di-p-Tolylamino)-4'-[(di-p-tolylamino)styryl]stilbene 55035-47-7, 9,10-Bis[4-(di-p-tolylamino)styryl]anthracene 62555-95-7 62556-02-9 80663-92-9, 2,5,8,11-Tetra-tert-butylperylene 96323-47-6 119564-27-1 120369-88-2 127374-49-6 155306-71-1, Coumarin 545T 155306-72-2, Coumarin 525T 200052-70-6, DCJTB 221455-80-7, Diphenylquinacridone 249288-60-6 369612-04-4, 2,8-Di-tert-butylperylene 478799-44-9 478799-49-4, 5,6,13,14-Tetraphenylpentacene 500800-87-3 682331-01-7

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(organic light-emitting diode devices  
using luminescent mixts.)

L104 ANSWER 16 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:250474 Document No. 140:294525 Organic electroluminescent device. Ishii, Toru; Seki, Mieko; Yoneyama, Hiroto; Okuda, Daisuke; Hirose, Eiichi; Ozaki, Tadayoshi; Agata, Takeshi; Mashimo, Kiyokazu; Sato, Katsuhiko (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo

Koho JP 2004095428 A2 20040325, 45 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2002-256498 20020902.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to an organic **electroluminescent** device comprising charge transporting polyether containing a partial structure represented by I and II [X = divalent aromatic group; T = C1-6 divalent chain hydrocarbon, and C2-10 divalent branched hydrocarbon; R1 = H, C1-10 hydrocarbon, C1-4 alkoxy, cyano, etc.; k = 0 or 1].

IT 675622-87-4P

RL: DEV (Device component use); PNU (Preparation, unclassified);  
PREP (Preparation); USES (Uses)

(organic **electroluminescent** device comprising charge transporting polyether)

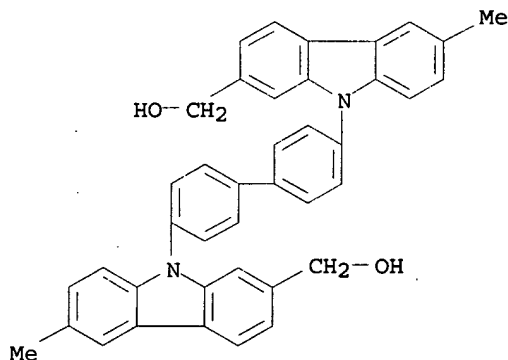
RN 675622-87-4 HCAPLUS

CN 9H-Carbazole-3-methanol, 9,9'-(9,10-anthracenediyl)bis-, polymer with 9,9'-[1,1'-biphenyl]-4,4'-diylbis[6-methyl-9H-carbazole-2-methanol] (9CI) (CA INDEX NAME)

CM 1

CRN 675622-86-3

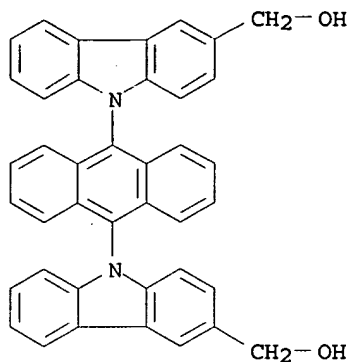
CMF C40 H32 N2 O2



CM 2

CRN 675622-85-2

CMF C40 H28 N2 O2



IC ICM H05B033-14  
ICS C08G065-34; C09K011-06; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 37, 74  
ST org electroluminescent device charge transport polyether  
IT **Electroluminescent devices**  
(organic **electroluminescent** device comprising charge transporting polyether)  
IT Polyethers, uses  
RL: DEV (Device component use); PNU (Preparation, unclassified);  
PREP (Preparation); USES (Uses)  
(organic **electroluminescent** device comprising charge transporting polyether)  
IT 675622-68-1P 675622-69-2P 675622-71-6P 675622-72-7P  
675622-74-9P 675622-75-0P 675622-77-2P 675622-78-3P  
675622-80-7P 675622-81-8P 675622-83-0P 675622-84-1P  
**675622-87-4P**  
RL: DEV (Device component use); PNU (Preparation, unclassified);  
PREP (Preparation); USES (Uses)  
(organic **electroluminescent** device comprising charge transporting polyether)

L104 ANSWER 17 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:219377 Document No. 140:278201 Organic **electroluminescent** device. Ishii, Toru; Okuda, Daisuke; Seki, Mieko; Yoneyama, Hiroto; Hirose, Eiichi; Ozaki, Tadayoshi; Agata, Takashi; Mashimo, Kiyokazu; Sato, Katsuhiro (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004087396 A2 20040318, 47 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-249235 20020828.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to an organic **electroluminescent** device comprising the charge transporting polyester containing the partial structure represented by I and II [X = divalent aromatic group; T = C1-6 divalent linear chain hydrocarbon and C2-10 divalent branched hydrocarbon groups; R1 = C1-10 hydrocarbon and aromatic groups; R2 = H, C1-10 hydrocarbon, C1-4 alkoxy, cyano, etc.; and i, j and k = 0 or 1].

IT **672921-50-5 672921-51-6**  
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device comprising charge transporting polyester)  
RN 672921-50-5 HCAPLUS

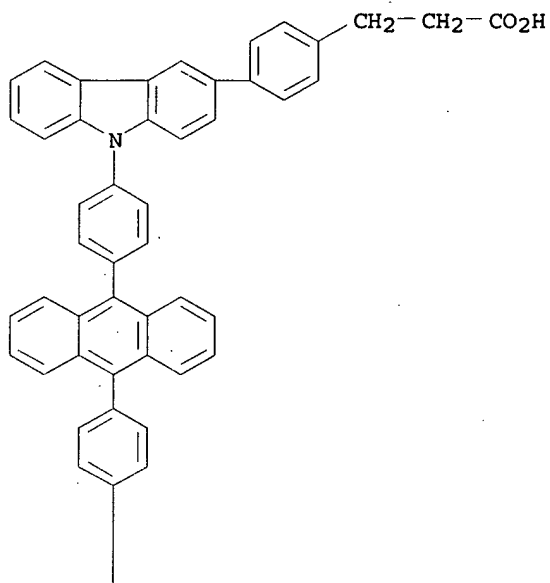
CN Benzenepropanoic acid, 4,4'-[9,10-anthracenediylbis(4,1-phenylene-9H-carbazole-9,3-diyl)]bis-, polymer with 1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

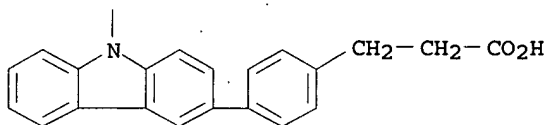
CRN 672921-49-2

CMF C68 H48 N2 O4

PAGE 1-A



PAGE 2-A



CM 2

CRN 107-21-1

CMF C2 H6 O2

HO-CH<sub>2</sub>-CH<sub>2</sub>-OH

RN 672921-51-6 HCAPLUS

CN Poly[9H-carbazole-3,9-diyl-1,4-phenylene-9,10-anthracenediyl-1,4-phenylene-9H-carbazole-9,3-diyl-1,4-phenylene(3-oxo-1,3-propanediyl)oxy-1,2-ethanediyl]oxy(1-oxo-1,3-propanediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

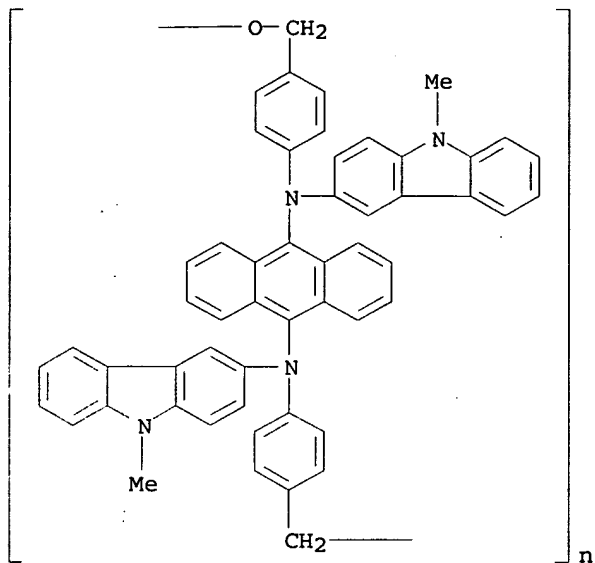
IC ICM H05B033-14  
ICS C08G063-685; C09K011-06; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 37, 74  
ST org **electroluminescent** device charge transporting polyester  
IT **Electroluminescent** devices  
(organic **electroluminescent** device comprising charge transporting polyester)  
IT Polyesters, uses  
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device comprising charge transporting polyester)  
IT 672921-42-5 672921-44-7 672921-47-0 672921-48-1  
672921-50-5 672921-51-6  
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device comprising charge transporting polyester)

L104 ANSWER 18 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:219376 Document No. 140:278200 Organic **electroluminescent** device. Ishii, Toru; Okuda, Daisuke; Seki, Mieko; Yoneyama, Hiroto; Hirose, Eiichi; Ozaki, Tadayoshi; Agata, Takeshi; Mashimo, Kiyokazu; Sato, Katsuhiko (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004087395 A2 20040318, 46 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2002-249234 20020828.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

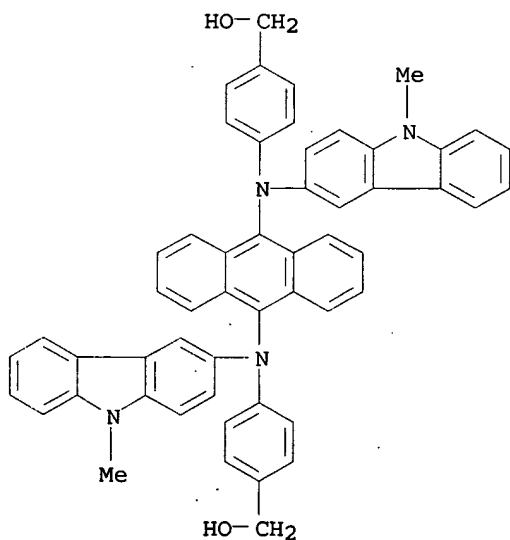
AB The invention relates to an organic **electroluminescent** device comprising the charge transporting polyether containing the partial structure represented by I and II [X = divalent aromatic group; T = C1-6 divalent linear chain hydrocarbon and C2-10 divalent branched hydrocarbon groups; R1 = C1-10 hydrocarbon and aromatic groups; R2 = H, C1-10 hydrocarbon, C1-4 alkoxy, cyano, etc.; and k = 0 or 1].  
IT 672939-30-9 672939-32-1 672939-36-5  
672939-38-7 672939-41-2  
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device comprising charge transporting polyether)  
RN 672939-30-9 HCAPLUS  
CN Poly[oxyethylene-1,4-phenylene[(9-methyl-9H-carbazol-3-yl)imino]-9,10-anthracenediyl[(9-methyl-9H-carbazol-3-yl)imino]-1,4-phenylenemethylene] (9CI) (CA INDEX NAME)



RN 672939-32-1 HCAPLUS  
 CN Benzenemethanol, 4,4'-[9,10-anthracenediylbis[(9-methyl-9H-carbazol-3-yl)imino]]bis-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 672939-31-0  
 CMF C54 H42 N4 O2



RN 672939-36-5 HCAPLUS  
 CN Poly[oxyethylene[1,1'-biphenyl]-4,4'-diyl[(9-methyl-9H-carbazol-3-yl)imino]-9,10-anthracenediyl[(9-methyl-9H-carbazol-3-yl)imino][1,1'-biphenyl]-4,4'-diylmethylen] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

RN 672939-38-7 HCAPLUS

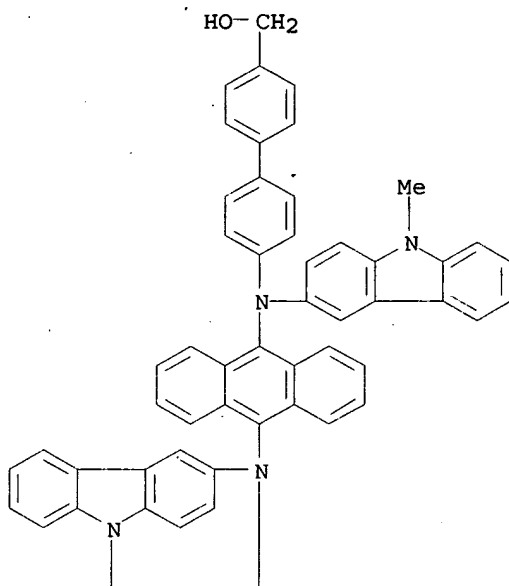
CN [1,1'-Biphenyl]-4-methanol, 4',4'''-[9,10-anthracenediylbis[(9-methyl-9H-carbazol-3-yl)imino]]bis-, homopolymer (9CI) (CA INDEX NAME)

CM 1

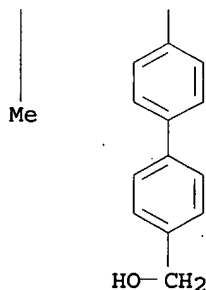
CRN 672939-37-6

CMF C66 H50 N4 O2

PAGE 1-A



PAGE 2-A

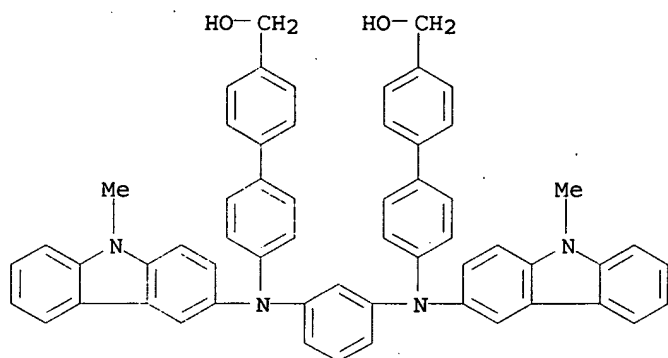


RN 672939-41-2 HCAPLUS

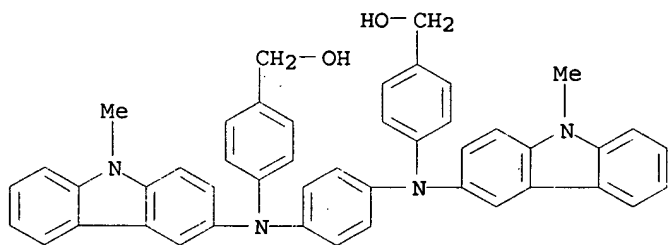
CN [1,1'-Biphenyl]-4-methanol, 4',4'''-[1,3-phenylenebis[(9-methyl-9H-carbazol-3-yl)imino]]bis-, polymer with 4',4'''-[9,10-anthracenediylbis[(9-methyl-9H-carbazol-3-yl)imino]]bis[benzenemethanol] and 4',4'''-[1,4-phenylenebis[(9-methyl-9H-carbazol-3-yl)imino]]bis[benzenemethanol] (9CI) (CA INDEX NAME)



CM 1

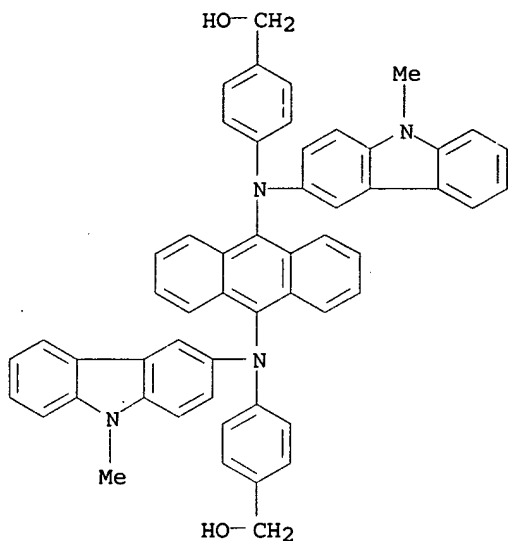
CRN 672939-40-1  
CMF C58 H46 N4 O2

CM 2

CRN 672939-39-8  
CMF C46 H38 N4 O2

CM 3

CRN 672939-31-0  
CMF C54 H42 N4 O2



IC ICM H05B033-14  
ICS C09K011-06; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 37, 74  
ST org **electroluminescent** device charge transport polyether  
IT **Electroluminescent** devices  
(organic **electroluminescent** device comprising charge transporting polyether)  
IT Polyethers, uses  
RL: DEV (Device component use); USES (Uses)  
(polyamine-; organic **electroluminescent** device comprising charge transporting polyether)  
IT Polyamines  
RL: DEV (Device component use); USES (Uses)  
(polyether-; organic **electroluminescent** device comprising charge transporting polyether)  
IT 672939-18-3 672939-20-7 672939-21-8 672939-23-0 672939-24-1  
672939-26-3 672939-27-4 672939-29-6 672939-30-9  
672939-32-1 672939-33-2 672939-35-4 672939-36-5  
672939-38-7 672939-41-2  
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device comprising charge transporting polyether)

L104 ANSWER 19 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:219375 Document No. 140:278199 Organic **electroluminescent** device. Ishii, Toru; Okuda, Daisuke; Seki, Mieko; Yoneyama, Hiroto; Hirose, Eiichi; Ozaki, Tadayoshi; Agata, Takashi; Mashimo, Kiyokazu; Sato, Katsuhiko (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004087393 A2 20040318, 52 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2002-249194 20020828.

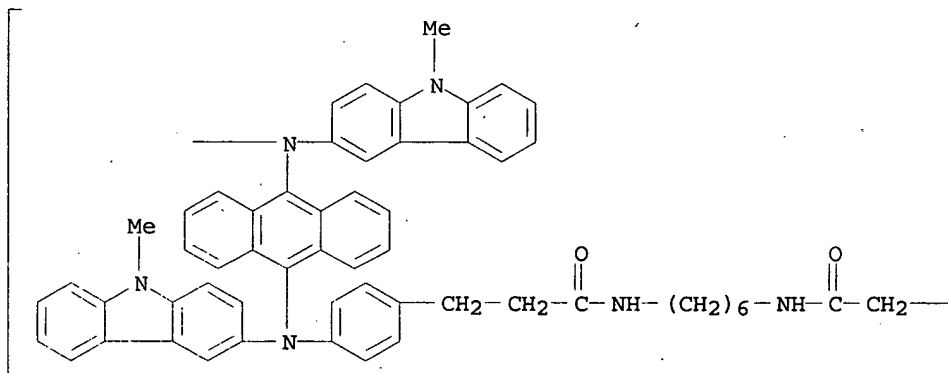
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

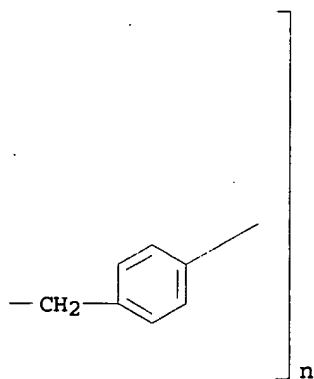
AB The invention relates to an organic **electroluminescent** device comprising the charge transporting polyurethane containing the partial structure represented by I and II [X = divalent aromatic group; T =

C1-6 divalent linear chain hydrocarbon and C2-10 divalent branched hydrocarbon groups; R1 = C1-10 hydrocarbon and aromatic groups; R2 = H, C1-10 hydrocarbon, C1-4 alkoxy, cyano, etc.; and k = 0 or 1].  
 IT 672937-85-8 672937-89-2  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent device comprising charge transporting polyurethane)  
 RN 672937-85-8 HCAPLUS  
 CN Poly[[(9-methyl-9H-carbazol-3-yl)imino]-9,10-anthracenediyl[(9-methyl-9H-carbazol-3-yl)imino]-1,4-phenylene(3-oxo-1,3-propanediyl)imino-1,6-hexanediylimino(1-oxo-1,3-propanediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



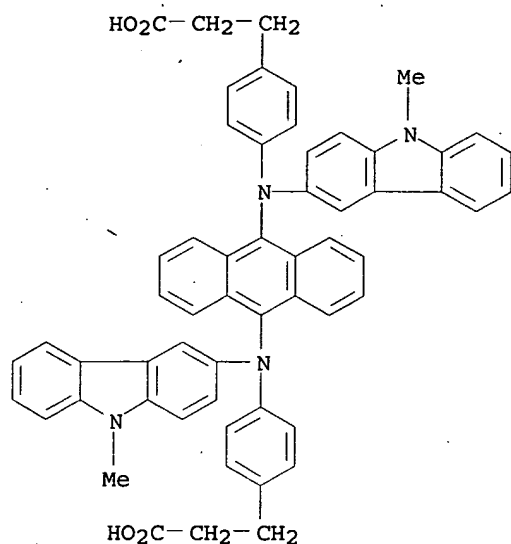
PAGE 1-B



RN 672937-89-2 HCAPLUS  
 CN Benzenepropanoic acid, 4,4'-[9,10-anthracenediylbis[(9-methyl-9H-carbazol-3-yl)imino]]bis-, polymer with 1,6-diisocyanatohexane (9CI)  
 (CA INDEX NAME)

CM 1

CRN 672937-88-1  
 CMF C58 H46 N4 O4



CM 2

CRN 822-06-0

CMF C8 H12 N2 O2

OCN-(CH<sub>2</sub>)<sub>6</sub>-NCO

IC ICM H05B033-14

ICS C08G018-38; C09K011-06; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 37, 74

ST org **electroluminescent** device charge transport polyurethaneIT **Electroluminescent** devices(organic **electroluminescent** device comprising charge transporting polyurethane)

IT Polyurethanes, uses

RL: DEV (Device component use); USES (Uses)

(organic **electroluminescent** device comprising charge transporting polyurethane)IT 672937-83-6 672937-84-7 **672937-85-8** 672937-86-9672937-87-0 **672937-89-2**

RL: DEV (Device component use); USES (Uses)

(organic **electroluminescent** device comprising charge transporting polyurethane)

IT 822-06-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(organic **electroluminescent** device comprising charge transporting polyurethane)

L104 ANSWER 20 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:198497 Document No. 140:225545 Phenylanthracenes for blue-emitting organic **electroluminescent** devices having high luminescent intensity and efficiency. Kawamura, Hisayuki (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004075580 A2 20040311, 24 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-235538 20020813.

AB The phenylanthracenes are A1LA2 (I) (A1, A2 = phenylanthryl, diphenylanthryl; L = C<sub>2</sub>8 polycyclic alicyclic group; A1 and

A2 link via different atoms of L). Organic electroluminescent devices have emitter or hole-transporting layers containing I.

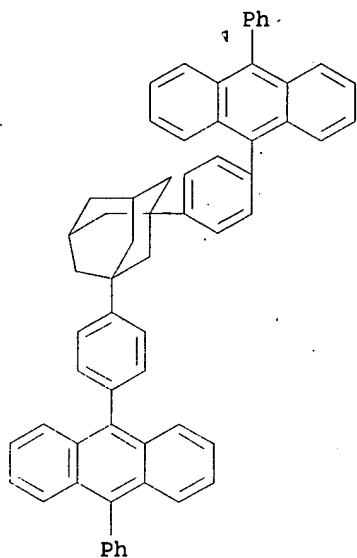
IT 665054-19-3P 665054-20-6P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(manufacture of polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic electroluminescent devices)

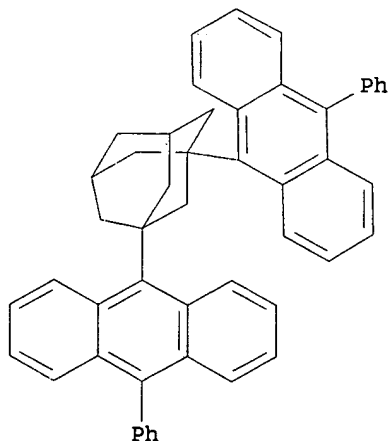
RN 665054-19-3 HCAPLUS

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 1,3-bis[4-(10-phenyl-9-anthracenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 665054-20-6 HCAPLUS

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 1,3-bis(10-phenyl-9-anthracenyl)- (9CI) (CA INDEX NAME)



IC ICM C07C013-615

ICS C09K011-06; H05B033-14; H05B033-22

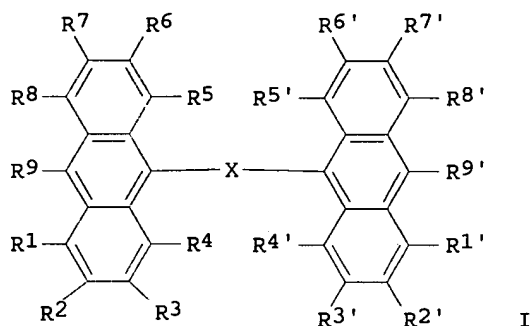
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

- ST phenylanthracene blue emitting org **electroluminescent** device; blue emitting **electroluminescent** adamantane phenylanthracene; hole transport phenylanthracene org **electroluminescent** device
- IT Amines, uses  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(aromatic, dopants; polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic **electroluminescent** devices)
- IT **Electroluminescent** devices  
(blue-emitting; polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic **electroluminescent** devices)
- IT Luminescent substances  
(**electroluminescent**; polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic **electroluminescent** devices)
- IT Hole transport  
(polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic **electroluminescent** devices)
- IT 154853-83-5 663954-33-4  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(dopants; polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic **electroluminescent** devices)
- IT 665054-19-3P 665054-20-6P  
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(manufacture of polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic **electroluminescent** devices)
- IT 23674-20-6P 625854-02-6P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(manufacture of polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic **electroluminescent** devices)
- IT 98-80-6, Benzenboronic acid 602-55-1, 9-Phenylanthracene 876-53-9, 1,3-Dibromoadamantane 1564-64-3, 9-Bromoanthracene 5467-74-3, 4-Bromophenylboronic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(manufacture of polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic **electroluminescent** devices)

L104 ANSWER 21 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:19914 Document No. 140:67430 **Electroluminescent** anthracene derivatives for various color-emitting organic **electroluminescent** devices. Fujita, Tetsushi; Inoue, Tetsuji; Kitagawa, Sumiko (TDK Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2004002351 A2 20040108, 60 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-88581 20030327. PRIORITY: JP 2002-89714 20020327.

GI



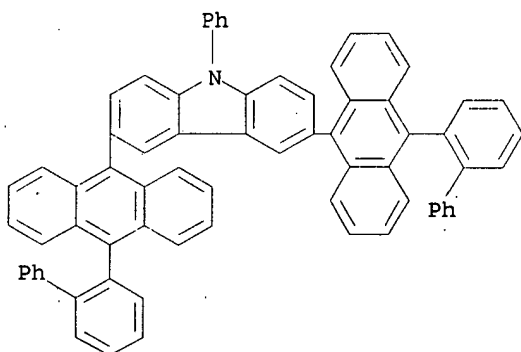
AB The derivs. are I (R1-R9, R1'-R9' =H, aryl, heterocyclic group, alkyl; X = ≥5-membered ring, ≥2 ring; X contain ≥1 elements other than C). The devices containing the derivs. show low operating voltage and high luminescence intensity and suppress leak current.

IT 639506-63-1

RL: DEV (Device component use); USES (Uses)  
(electroluminescent anthracene derivs. for various color-emitting organic electroluminescent devices)

RN 639506-63-1 HCAPLUS

CN 9H-Carbazole, 3,6-bis(10-[1,1'-biphenyl]-2-yl-9-anthracenyl)-9-phenyl- (9CI) (CA INDEX NAME)



IC ICM C07D333-76

ICS C09K011-06; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 27, 28

ST anthracene org electroluminescent device; biphenyl

dibenzothiophene org electroluminescent device

IT Electroluminescent devices

(electroluminescent anthracene derivs. for various color-emitting organic electroluminescent devices)

IT Luminescent substances

(electroluminescent; electroluminescent anthracene derivs. for various color-emitting organic electroluminescent devices)

IT 517-51-1 175606-05-0 187086-26-6 639506-61-9 639506-62-0

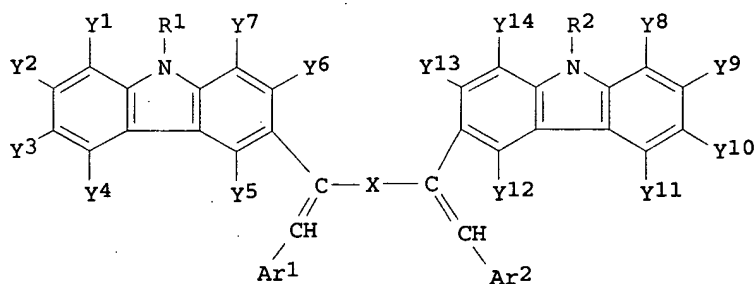
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(dopant; electroluminescent anthracene derivs. for various color-emitting organic electroluminescent devices)

- IT 91-64-5D, Coumarin, derivs. 92-24-0D, Naphthacene, derivs.  
 120-12-7D, Anthracene, derivs. 129-00-0D, Pyrene, derivs.  
 188-94-3D, Diindeno[1,2,3-cd:1',2',3'-lm]perylene, derivs.  
 198-55-0D, Perylene, derivs. 207-08-9D, Benzo[k]fluoranthene,  
 derivs. 260-94-6D, Acridine, derivs. 578-95-0D, Acridone,  
 derivs. 1047-16-1D, Quinacridone, derivs. 5694-20-2D,  
 Styrylamine, derivs.  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (dopants; **electroluminescent** anthracene derivs. for  
 various color-emitting organic **electroluminescent** devices)
- IT 639506-63-1  
 RL: DEV (Device component use); USES (Uses)  
 (**electroluminescent** anthracene derivs. for various  
 color-emitting organic **electroluminescent** devices)
- IT 639506-60-8P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (**electroluminescent** anthracene derivs. for various  
 color-emitting organic **electroluminescent** devices)
- IT 400607-16-1P 400607-48-9P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (**electroluminescent** anthracene derivs. for various  
 color-emitting organic **electroluminescent** devices)
- IT 523-27-3, 9,10-Dibromoanthracene 4688-76-0 31574-87-5,  
 2,8-Dibromodibenzothiophene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (**electroluminescent** anthracene derivs. for various  
 color-emitting organic **electroluminescent** devices)

L104 ANSWER 22 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2003:793581 Document No. 139:299027 Styryl compounds and long-life and  
 high-luminance organic **electroluminescent** devices  
 therewith. Totani, Yoshiyuki; Shimamura, Takehiko; Ishida, Tsutomu;  
 Tanabe, Yoshimitsu; Nakatsuka, Masakatsu (Mitsui Chemicals Inc.,  
 Japan). Jpn. Kokai Tokkyo Koho JP 2003286260 A2 20031010, 48 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-95603 20020329.

GI

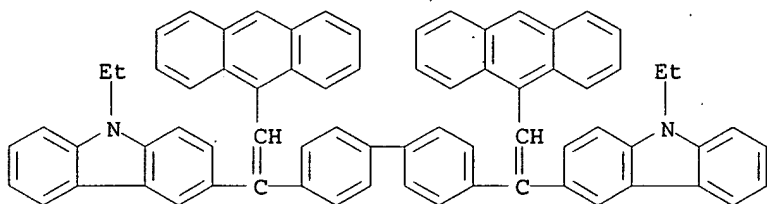


- AB The compds., useful for **electroluminescent** materials  
 included in emission or hole (or electron)-injecting/transporting  
 layers of organic LED, are I [R1, R2 = (aryl)alkyl, aromatic hydrocarbyl,  
 aromatic heterocyclic group; Ar1, Ar2 = aromatic hydrocarbyl, aromatic  
 heterocyclic group; Y1-Y14 = H, halo, alkyl(oxy), aromatic hydrocarbyl,  
 aromatic heterocyclic group; X = bivalent aromatic hydrocarbylene or  
 heterocyclic bridging group].

- IT 609819-41-2P  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES  
 (Uses)



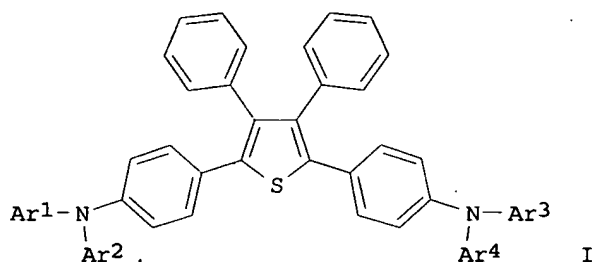
(long-life and high-luminance organic  
LED containing carbazoyl-substituted novel styryl compds.)  
RN 609819-41-2 HCAPLUS  
CN 9H-Carbazole, 3,3'-[1,1'-biphenyl]-4,4'-diylbis(9-  
anthracenylethenylidene)]bis[9-ethyl- (9CI) (CA INDEX NAME)



IC ICM C07D209-86  
ICS C07D209-88; C07D401-14; C07D405-14; C07D409-14; C09K011-06;  
H05B033-14; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)  
Section cross-reference(s): 27  
ST carbazoyl styryl **electroluminescent** device durability  
luminance  
IT Luminescent substances  
(**electroluminescent**; long-life and high-  
luminance organic LED containing  
carbazoyl-substituted novel styryl compds.)  
IT **Electroluminescent** devices  
(organic; long-life and high-luminance organic  
LED containing carbazoyl-substituted novel styryl compds.)  
IT 609819-29-6P 609819-33-2P 609819-37-6P **609819-41-2P**  
609819-44-5P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)  
(long-life and high-luminance organic  
LED containing carbazoyl-substituted novel styryl compds.)  
IT 1080-32-6P, Diethyl benzylphosphonate 609819-48-9P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(long-life and high-luminance organic  
LED containing carbazoyl-substituted novel styryl compds.)  
IT 86-28-2, N-Ethylcarbazole 100-44-7, Benzyl chloride, reactions  
122-52-1, Triethyl phosphite 787-70-2, [1,1'-Biphenyl]-4,4'-  
dicarboxylic acid 3163-27-7, 1-Bromomethylnaphthalene  
24463-19-2, 9-Chloromethylantracene 38580-83-5,  
2-Chloromethylbiphenyl 609819-52-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(long-life and high-luminance organic  
LED containing carbazoyl-substituted novel styryl compds.)

L104 ANSWER 23 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2003:750705 Document No. 139:267732 Organic **electroluminescent**  
devices showing stable and bright emission and  
arylaminothiophene derivatives therefor. Shimamura, Takehiko;  
Tanabe, Yoshimitsu; Ishida, Tsutomu; Totani, Yoshiyuki; Nakatsuka,  
Masakatsu (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP  
2003267973 A2 20030925, 26 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2002-74286 20020318.

GI



AB Arylaminothiophene derivs. I (Ar1-Ar4 = aryl where  $\geq 1$  of them is anthryl) and organic **electroluminescent** devices having I in hole-injecting or emission layers and exhibiting the mentioned advantages are both claimed.

IT 603132-41-8P

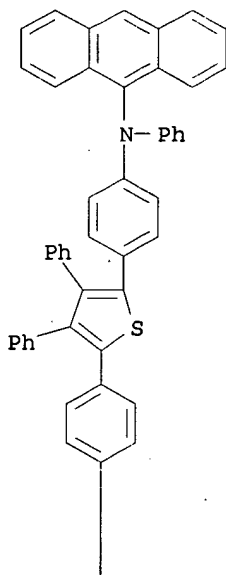
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(novel arylaminothiophene derivs. for organic **electroluminescent** devices showing stable and bright emission)

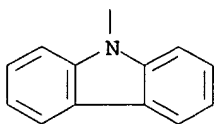
RN 603132-41-8 HCAPLUS

CN 9-Anthracenamine, N-[4-[5-[4-(9H-carbazol-9-yl)phenyl]-3,4-diphenyl-2-thienyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



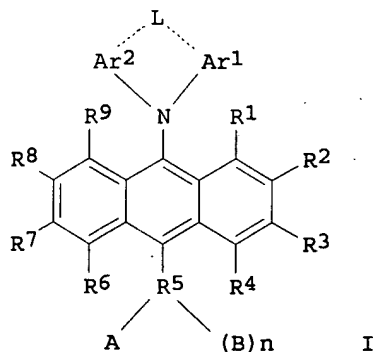
PAGE 2-A



IC ICM C07D333-20

ICS C07D409-10; C07D417-10; C09K011-06; H05B033-14; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 27  
 ST **electroluminescent** device luminance intensity durability  
 arylaminophenylthiophene  
 IT Luminescent substances  
 (electroluminescent; novel arylaminophenylthiophene  
 derivs. for organic **electroluminescent** devices showing  
 stable and bright emission)  
 IT **Electroluminescent** devices  
 (organic; novel arylaminophenylthiophene derivs. for organic  
**electroluminescent** devices showing stable and bright  
 emission)  
 IT 566915-46-6P 566915-48-8P 603132-40-7P **603132-41-8P**  
 603132-45-2P 603132-46-3P 603132-48-5P 603132-50-9P  
 603132-51-0P 603132-53-2P 603132-55-4P 603132-56-5P  
 603132-57-6P 603132-58-7P 603132-59-8P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (novel arylaminophenylthiophene derivs. for organic  
**electroluminescent** devices showing stable and bright  
 emission)  
 IT 86-74-8, Carbazole 90-30-2, 1-Phenylaminonaphthalene 92-66-0,  
 4-Bromobiphenyl 122-39-4, Diphenylamine, reactions 625-95-6,  
 3-Iodotoluene 1208-86-2, N-Phenyl-4-methoxyaniline 1564-64-3,  
 9-Bromoanthracene 1718-54-3 15409-83-3 15409-87-7 96216-36-3  
 101228-53-9 107541-96-8 603132-60-1 603132-61-2 603132-62-3  
 603132-63-4 603132-64-5 603132-65-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (novel arylaminophenylthiophene derivs. for organic  
**electroluminescent** devices showing stable and bright  
 emission)  
 L104 ANSWER 24 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2003:673851 Document No. 139:204846 Anthracene compounds, their  
 organic **EL** device materials, and their **EL**  
 devices having high emission efficiency, long service life, and good  
 heat resistance. Hosokawa, Chishio; Funabashi, Masakazu; Ikeda,  
 Shuji; Yamamoto, Hiroshi (Idemitsu Kosan Co., Ltd., Japan). Jpn.  
 Kokai Tokkyo Koho JP 2003238534 A2 20030827, 23 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 2002-45705 20020222.

GI



AB The anthracene compds. are represented by a general formula of I  
 [R1-R4, R6-R9 = H, halo, OH, NO2, CN, amino, C1-30 alkyl, C4-40

alkenyl, CO<sub>2</sub>H, etc.; R<sub>5</sub> = divalent or trivalent C<sub>5</sub>-40 aromatic, divalent or trivalent C<sub>2</sub>-40 aromatic heterocyclic; R<sub>1</sub>-R<sub>9</sub> may be bonded to neighboring group and form ring; A, B = C<sub>6</sub>-40 aryl, aromatic C<sub>2</sub>-40 heterocyclic; when R<sub>5</sub> = C<sub>10</sub>-40 aromatic or aromatic C<sub>5</sub>-40 heterocyclic, A may be H; Ar<sub>1</sub>, Ar<sub>2</sub> = C<sub>6</sub>-40 aryl, aromatic C<sub>2</sub>-40 heterocyclic, may be bonded to each other via linkage group L; L = (CR<sub>10</sub>R<sub>11</sub>)<sub>m</sub>, (SiR<sub>10</sub>R<sub>11</sub>)<sub>m</sub>, NR<sub>12</sub><sub>m</sub>, vinylene, C<sub>6</sub>-40 arylene; R<sub>10</sub>-R<sub>12</sub> = H, halo, C<sub>1</sub>-40 alkyl, C<sub>5</sub>-40 cycloalkyl, C<sub>5</sub>-40 aromatic hydrocarbyl, aromatic C<sub>2</sub>-40 heterocyclic, C<sub>7</sub>-40 aralkyl; m = 1, 2, 3; n = 0, 1]. The organic EL device contains, between anodes and cathodes, ≥1 organic thin-film layers involving a luminescent layer and containing I in ≥1 of the layers. Preferably, the organic thin-film layers consist of a luminescent layer, an electron-transporting layer, and a hole-transporting layer and at least the luminescent layer contains I. Preferably, the luminescent layer further contains arylamine compds. which may be selected from those represented by a general formula of Ar<sub>5</sub>(NAr<sub>6</sub>Ar<sub>7</sub>)<sub>p</sub> (Ar<sub>5</sub> = C<sub>6</sub>-40 aromatic; Ar<sub>6</sub>, Ar<sub>7</sub> = H, C<sub>6</sub>-40 aromatic; p = 1-6 integer) or Ar<sub>8</sub>(NAr<sub>9</sub>)<sub>q</sub>Ar<sub>10</sub>rNAr<sub>11</sub>Ar<sub>12</sub>s(NAr<sub>13</sub>)<sub>t</sub>Ar<sub>14</sub> (Ar<sub>8</sub>, Ar<sub>14</sub> = C<sub>6</sub>-40 aromatic; Ar<sub>9</sub>-Ar<sub>13</sub> = H, C<sub>6</sub>-40 aromatic; q, r, s t = 0, 1). The electron-transporting layer may contain inorg. compds., preferably selected from dielects., semiconductors, or fine-crystalline or amorphous dielec. thin films. The dielects. may comprise ≥1 compds. selected from alkali metal chalcogenides, alkaline earth metal chalcogenides, alkali metal halides, and alkaline earth metal halides. The semiconductors may comprise ≥1 oxides, nitrides, or oxynitrides of ≥1 elements selected from Ba, Ca, Sr, Yb, Al, Ga, In, Li, Na, Cd, Mg, Si, Ta, Sb, and Zn. The electron-transporting layer may contain reducing dopants, preferably, ≥1 alkali metals selected from Na, K, Rb, and Cs and/or ≥1 alkaline earth metals selected from Ca, r, and/or Ba. In another alternative, the organic thin-film layers consist of an electron-transporting layer, and a hole-transporting layer and at least one of these layers contain I.

IT 585533-55-7P 585533-57-9P 585533-59-1P

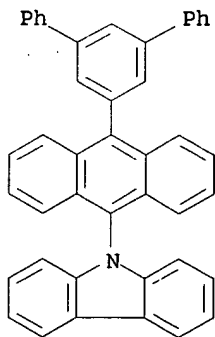
585533-64-8P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(anthracene compds. for organic EL device having high emission efficiency, long service life, and good heat resistance)

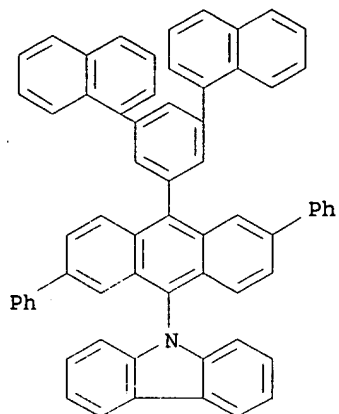
RN 585533-55-7 HCAPLUS

CN 9H-Carbazole, 9-(10-[1,1':3',1''-terphenyl]-5'-yl-9-anthracenyl)-(9CI) (CA INDEX NAME)



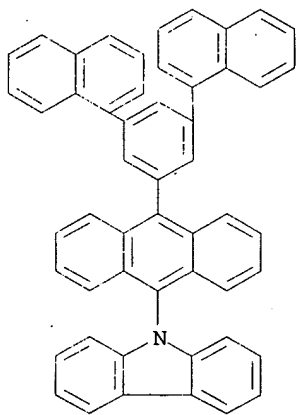
RN 585533-57-9 HCAPLUS

CN 9H-Carbazole, 9-[10-(3,5-di-1-naphthalenylphenyl)-2,6-diphenyl-9-anthracenyl]-(9CI) (CA INDEX NAME)



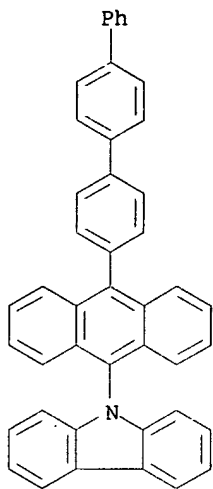
RN 585533-59-1 HCAPLUS

CN 9H-Carbazole, 9-[10-(3,5-di-1-naphthalenylphenyl)-9-anthracenyl]-(9CI) (CA INDEX NAME)



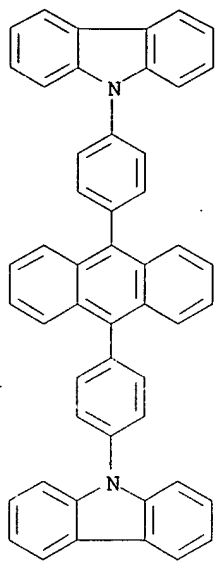
RN 585533-64-8 HCAPLUS

CN 9H-Carbazole, 9-(10-[1,1':4',1''-terphenyl]-4-yl-9-anthracenyl)-(9CI) (CA INDEX NAME)



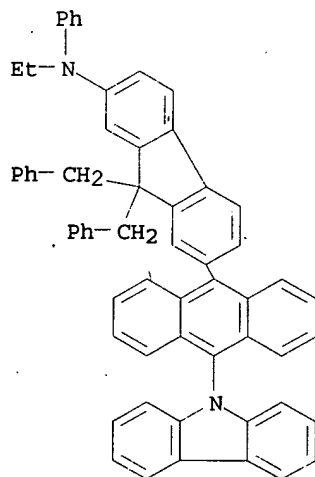
- IC ICM C07D209-86  
ICS C07D223-22; C07D241-46; C07D471-04; C09K011-06; H05B033-14;  
H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25
- ST anthracene compd org **electroluminescent** device
- IT Alkali metal chalcogenides  
Alkali metal halides, uses  
Alkaline earth chalcogenides  
Alkaline earth halides  
RL: DEV (Device component use); USES (Uses)  
(dielec., in electron-transporting layer; anthracene compds. for organic **EL** device having high emission efficiency, long service life, and good heat resistance)
- IT **Electroluminescent** devices  
(organic; anthracene compds. for organic **EL** device having high emission efficiency, long service life, and good heat resistance)
- IT 585533-53-5P 585533-54-6P 585533-55-7P 585533-56-8P  
585533-57-9P 585533-58-0P 585533-59-1P  
585533-64-8P  
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(anthracene compds. for organic **EL** device having high emission efficiency, long service life, and good heat resistance)
- IT 474688-74-9P 478495-51-1P 585533-60-4P 585533-61-5P  
585533-62-6P 585533-63-7P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(anthracene compds. for organic **EL** device having high emission efficiency, long service life, and good heat resistance)
- IT 86-74-8, Carbazole 256-96-2, Iminostilbene 1564-64-3,  
9-Bromoanthracene 1762-84-1, 4-Bromo-p-terphenyl 103068-20-8  
173678-07-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(anthracene compds. for organic **EL** device having high emission efficiency, long service life, and good heat resistance)
- IT 2085-33-8, Tris(8-quinolinol) aluminum  
RL: DEV (Device component use); USES (Uses)  
(electron-injection layer; anthracene compds. for organic **EL** device having high emission efficiency, long service life, and good heat resistance)
- IT 209980-53-0

- RL: DEV (Device component use); USES (Uses)  
(hole-injection layer; anthracene compds. for organic EL device having high emission efficiency, long service life, and good heat resistance)
- IT 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl  
RL: DEV (Device component use); USES (Uses)  
(hole-transporting layer; anthracene compds. for organic EL device having high emission efficiency, long service life, and good heat resistance)
- IT 7440-09-7, Potassium, uses 7440-17-7, Rubidium, uses 7440-23-5, Sodium, uses 7440-24-6, Strontium, uses 7440-39-3, Barium, uses 7440-46-2, Cesium, uses 7440-70-2, Calcium, uses  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(reducing dopant, in electron-transporting layer; anthracene compds. for organic EL device having high emission efficiency, long service life, and good heat resistance)
- IT 7429-90-5D, Aluminum, oxide, nitride, oxynitride 7439-93-2D, Lithium, oxide, nitride, oxynitride 7439-95-4D, Magnesium, oxide, nitride, oxynitride 7440-21-3D, Silicon, oxide, nitride, oxynitride 7440-23-5D, Sodium, oxide, nitride, oxynitride 7440-24-6D, Strontium, oxide, nitride, oxynitride 7440-25-7D, Tantalum, oxide, nitride, oxynitride 7440-36-0D, Antimony, oxide, nitride, oxynitride 7440-39-3D, Barium, oxide, nitride, oxynitride 7440-43-9D, Cadmium, oxide, nitride, oxynitride 7440-55-3D, Gallium, oxide, nitride, oxynitride 7440-64-4D, Ytterbium, oxide, nitride, oxynitride 7440-66-6D, Zinc, oxide, nitride, oxynitride 7440-70-2D, Calcium, oxide, nitride, oxynitride 7440-74-6D, Indium, oxide, nitride, oxynitride  
RL: DEV (Device component use); USES (Uses)  
(semiconductor, in electron-transporting layer; anthracene compds. for organic EL device having high emission efficiency, long service life, and good heat resistance)
- L104 ANSWER 25 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2003:628443 Document No. 139:171119 Organic electroluminescent device comprising coupled anthracene fluorene derivative and with amino-substituted hydrocarbon. Totani, Yoshiyuki; Ishida, Tsutomu; Shimamura, Takehiko; Tanabe, Yoshimitsu; Nakatsuka, Masakatsu (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003229273 A2 20030815, 122 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-25736 20020201.
- AB The invention refers to an organic electroluminescent device comprising one or two fluorene rings directed bonded to an anthracene and a amino-substituted hydrocarbon.
- IT 194296-19-0 577795-87-0  
RL: DEV (Device component use); USES (Uses)  
(organic electroluminescent device comprising coupled anthracene fluorene derivative and with amino-substituted hydrocarbon)
- RN 194296-19-0 HCAPLUS  
CN 9H-Carbazole, 9,9'-(9,10-anthracenediyl-di-4,1-phenylene)bis- (9CI)  
(CA INDEX NAME)



RN 577795-87-0 HCAPLUS

CN 9H-Fluoren-2-amine, 7-[10-(9H-carbazol-9-yl)-9-anthracenyl]-N-ethyl-N-phenyl-9,9-bis(phenylmethyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device anthracene fluorene

IT **Electroluminescent** devices

(organic **electroluminescent** device comprising coupled anthracene fluorene derivative and with amino-substituted hydrocarbon)

IT 400605-92-7 400605-99-4 400606-62-4 400606-71-5 400606-72-6

400606-81-7 577795-75-6 577795-76-7 577795-77-8 577795-78-9

577795-79-0 577795-80-3 577795-81-4

RL: DEV (Device component use); USES (Uses)

(comps. with fluorenes; organic **electroluminescent** device comprising coupled anthracene fluorene derivative and with



amino-substituted hydrocarbon)

IT 96773-85-2 144810-07-1 150220-33-0 150220-36-3 150973-91-4  
 177799-14-3 177799-15-4 177799-16-5 189263-89-6 189263-91-0  
 194295-85-7 194295-98-2 194296-12-3 194296-19-0  
 400606-21-5 400606-86-2 400606-87-3 522615-57-2 577795-82-5  
 577795-83-6 577795-84-7 577795-85-8 577795-86-9  
 577795-87-0 577795-88-1

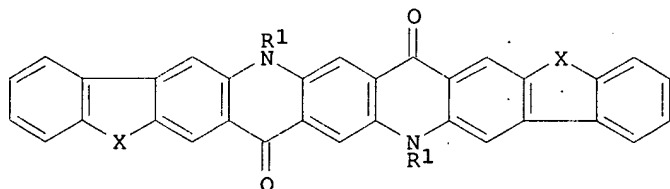
RL: DEV (Device component use); USES (Uses)

(organic **electroluminescent** device comprising coupled  
 anthracene fluorene derivative and with amino-substituted  
 hydrocarbon)

L104 ANSWER 26 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:525414 Document No. 139:85329 Preparation of white fluorescent  
 quinacridones. Nakaya, Tadao; Eto, Naonobu; Saikawa, Tomoyuki;  
 Ikeda, Atsushi; Kimura, Yoshihiro; Yamauchi, Takao (Taiho Kogyo Co.,  
 Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003192684 A2 20030709, 31  
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-12223  
 20020121. PRIORITY: JP 2001-292509 20010925; JP 2001-317385  
 20011015; JP 2001-319621 20011017.

GI



I

AB Title compds. I (X = NR<sub>2</sub>, CR<sub>3</sub>R<sub>4</sub>; R<sub>1</sub>-R<sub>4</sub> = H, alkyl, aryl, arylalkyl),  
 showing good fastness, processability, and high luminance, are  
 prepared 3-Amino-9-ethylcarbazole was condensed with  
 1,4-bis(ethoxycarbonyl)-2,5-dihydroxy-1,4-cyclohexadiene,  
 dehydrogenated, and intramolecularly cyclocondensed to give I (R<sub>1</sub> =  
 H, X = NEt) (II). An **electroluminescent** device using II  
 showed luminance 2300 Cd/m<sup>2</sup> and chromaticity X = Y = 0.33 at 21 V  
 and 9.69 mA.

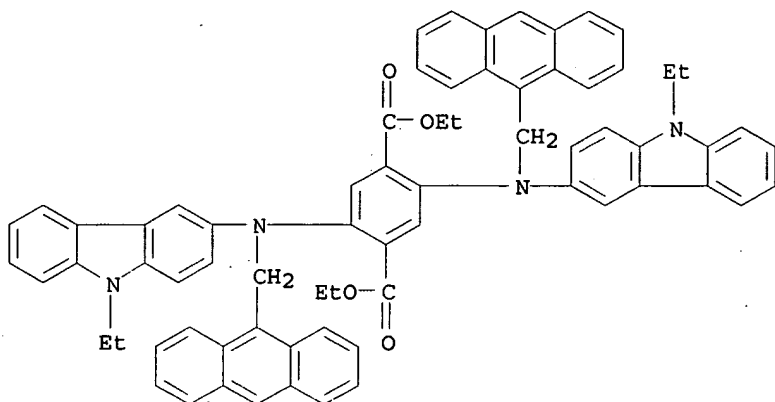
IT 556112-54-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)

(preparation of white fluorescent quinacridones)

RN 556112-54-0 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, 2,5-bis[(9-anthracenylmethyl)(9-ethyl-  
 9H-carbazol-3-yl)amino]-, diethyl ester (9CI) (CA INDEX NAME)



IC ICM C07D471-04  
ICS C07D471-22; C09K011-06; H05B033-14  
CC 28-2 (Heterocyclic Compounds (More Than One Hetero Atom))  
Section cross-reference(s): 73  
IT **Electroluminescent devices**  
Fluorescent substances  
(preparation of white fluorescent quinacridones)  
IT 142226-64-0P 142226-65-1P 142820-38-0P 556112-37-9P  
556112-38-0P 556112-40-4P 556112-41-5P 556112-43-7P  
556112-45-9P 556112-47-1P 556112-49-3P 556112-51-7P  
556112-54-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)  
(preparation of white fluorescent quinacridones)

L104 ANSWER 27 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

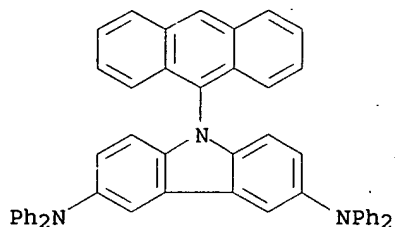
2003:513703 Document No. 139:299146 High-Tg carbazole derivatives as  
blue-emitting hole-transporting materials for

**electroluminescent devices.** Kundu, Parimal; Thomas, K. R.  
Justin; Lin, Jiann T.; Tao, Yu-Tai; Chien, Chin-Hsiung (Institute of  
Chemistry, Academia Sinica, Taipei, 115, Taiwan). Advanced  
Functional Materials, 13(6), 445-452 (English) 2003. CODEN: AFMDC6.  
ISSN: 1616-301X. Publisher: Wiley-VCH Verlag GmbH & Co. KGaA.

AB Dicarbazolyl derivs. bridged by various aromatic spacers and decorated  
with peripheral diarylamines were synthesized using Ullmann and  
Pd-catalyzed C-N coupling procedures. These derivs. **emit**  
blue **light** in solution. In general, they possess high  
glass-transition temps. ( $T_g > 125^\circ$ ) which vary with the  
bridging segment and Me substitution on the peripheral amine.  
Double-layer organic **light-emitting devices** were  
successfully fabricated using these mols. as hole-transporting and  
emitting materials. Devices of the configuration ITO/HTL/TPBI/Mg:Ag  
(ITO: In Sn oxide; HTL: hole-transporting layer; TPBI:  
1,3,5-tris(N-phenylbenzimidazol-2-yl)benzene) display blue emission  
from the HTL layer. The **EL** spectra of these devices  
appear slightly distorted due to the exciplex formation at the  
interfaces. However, for the devices of the configuration  
ITO/HTL/Alq3/Mg:Ag (Alq3 = tris(8-hydroxyquinoline)aluminum) a  
bright green light from the Alq3 layer was observed. This clearly  
demonstrates the facile hole-transporting property of the materials  
described here.

IT 608527-69-1P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
preparation); PREP (Preparation); USES (Uses)  
(preparation and properties of dicarbazolyl derivs. containing peripheral  
diarylamines for use as blue-emitting hole-transporting materials  
for **electroluminescent devices**)

RN 608527-69-1 HCAPLUS  
 CN 9H-Carbazole-3,6-diamine, 9-(9-anthracenyl)-N,N,N',N'-tetraphenyl-  
 (9CI) (CA INDEX NAME)



- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 73
- ST carbazole deriv blue emitting hole transporting  
**electroluminescent**; hole transport emitting material bridged  
 carbazolyl arylamine deriv LED
- IT **Electroluminescent devices**  
 (displays; preparation and properties of dicarbazolyl derivs. containing  
 peripheral diarylamines for use as blue-emitting  
 hole-transporting materials for **electroluminescent**  
 devices)
- IT Hole transport  
 (**electroluminescent** devices containing bridged dicarbazolyl  
 derivs. with peripheral diarylamines as blue-emitting  
 hole-transporting materials)
- IT Luminescent screens  
 Luminescent substances  
 (**electroluminescent**; preparation and properties of  
 dicarbazolyl derivs. containing peripheral diarylamines for use as  
 blue-emitting hole-transporting materials for  
**electroluminescent** devices)
- IT Cyclic voltammetry  
 Differential pulse voltammetry  
 (preparation and electrochem. properties of dicarbazolyl derivs.  
 containing peripheral diarylamines for use in  
**electroluminescent** devices)
- IT Exciplex  
 Luminescence  
 (preparation and photophys. properties of dicarbazolyl derivs. containing  
 peripheral diarylamines for use in **electroluminescent**  
 devices)
- IT Glass transition temperature  
 HOMO (molecular orbital)  
 LUMO (molecular orbital)  
 Oxidation potential  
 Thermal properties  
 (preparation and properties of dicarbazolyl derivs. containing peripheral  
 diarylamines for use as blue-emitting hole-transporting materials  
 for **electroluminescent** devices)
- IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 50926-11-9,  
 ITO  
 RL: DEV (Device component use); USES (Uses)  
 (**electroluminescent** devices containing bridged dicarbazolyl  
 derivs. with peripheral diarylamines as blue-emitting  
 hole-transporting materials)
- IT 2085-33-8, Alq3 192198-85-9, 1,3,5-Tris(N-phenylbenzimidazol-2-  
 yl)benzene)  
 RL: DEV (Device component use); USES (Uses)  
 (electron-transport layer; **electroluminescent** devices  
 containing bridged dicarbazolyl derivs. with peripheral diarylamines

as blue-emitting hole-transporting materials)

IT 608527-60-2P 608527-61-3P 608527-62-4P 608527-63-5P  
608527-64-6P 608527-65-7P 608527-66-8P 608527-67-9P  
608527-68-0P 608527-69-1P 608527-70-4P 608527-71-5P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation and properties of dicarbazolyl derivs. containing peripheral diarylamines for use as blue-emitting hole-transporting materials for electroluminescent devices)

L104 ANSWER 28 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:369071 Document No. 138:376130 Organic **electroluminescent** device with tetraaryl methane or tetraaryl silane. Suzuki, Koichi; Ueno, Kazunori; Saito, Akito (Canon Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003138251 A2 20030514, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-332855 20011030.

AB The invention refers to an organic **electroluminescent** device comprising a tetraaryl methane or tetraaryl silane.

IT 522666-04-2

RL: DEV (Device component use); USES (Uses)

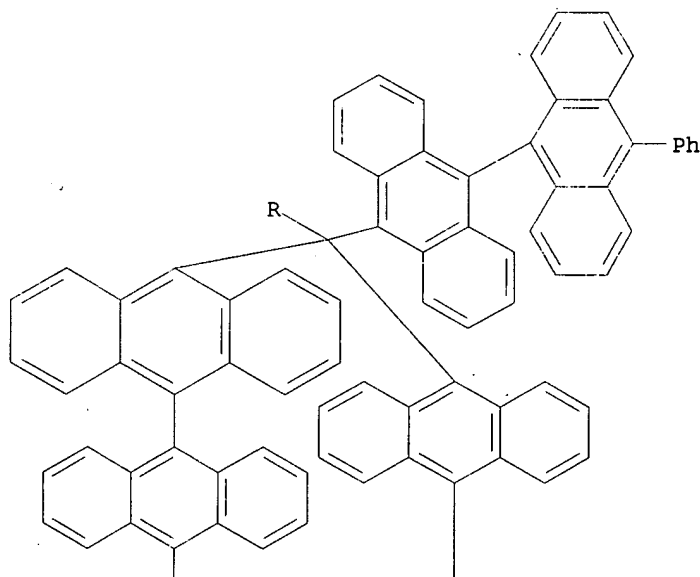
(organic **electroluminescent** device with tetraaryl methane or tetraaryl silane)

RN 522666-04-2 HCAPLUS

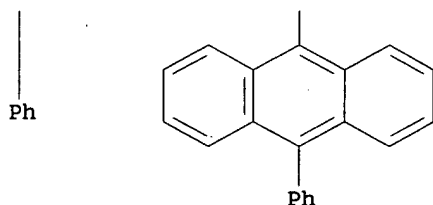
CN 9,9'-Bianthracene, 10,10'',10''',10''''-

methanetetrayltetrakis[10''-phenyl- (9CI) (CA INDEX NAME)

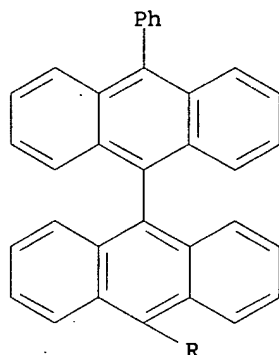
PAGE 1-A



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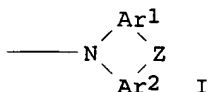
PAGE 3-A



IC ICM C09K011-06  
 ICS H05B033-14; H05B033-22; C07C015-16; C07C015-52; C07C015-60;  
 C07C015-62; C07C022-08; C07C211-54; C07C255-51; C07C255-52;  
 C07F007-06; C07F007-08; C07F007-10  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 ST org electroluminescent device tetraaryl silane methane  
 IT **Electroluminescent devices**  
 (organic electroluminescent device with tetraaryl methane  
 or tetraaryl silane)  
 IT 288105-05-5 522665-89-0 522665-90-3 522665-91-4 522665-92-5  
 522665-93-6 522665-94-7 522665-95-8 522665-96-9 522665-97-0  
 522665-98-1 522665-99-2 522666-00-8 522666-01-9 522666-02-0  
 522666-03-1 **522666-04-2** 522666-05-3 522666-06-4  
 522666-07-5 522666-08-6 522666-09-7 522666-10-0 522666-11-1  
 522666-12-2 522666-13-3 522666-14-4 522666-15-5 522666-16-6  
 522666-17-7 522666-18-8 522666-19-9 522666-20-2 522666-21-3  
 522666-22-4 522666-23-5  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent device with tetraaryl methane  
 or tetraaryl silane)

L104 ANSWER 29 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2003:349283 Document No. 138:376099 Organic electroluminescent  
 devices of high brightness and luminescent efficiency and anthracene  
 derivatives therefor. Ishida, Tsutomu; Shimamura, Takehiko; Tanabe,  
 Yoshimitsu; Totani, Yoshiyuki; Nakatsuka, Masakatsu (Mitsui  
 Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003128651 A2  
 20030508, 99 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 2001-317783 20011016.

GI



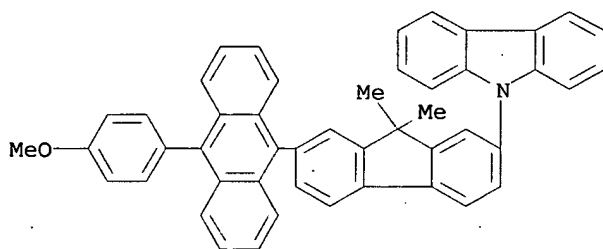
AB The anthracene derivs. have direct bonds between anthracene ring and  
 fluorene ring and bear group I (Ar1, Ar2 = arylene; Z = bridging  
 group).  
 IT **522615-53-8P 522615-54-9P 522615-61-8P**  
**522615-64-1P 522615-66-3P 522615-67-4P**

522615-77-6P 522615-79-8P 522615-83-4P  
522615-90-3P 522615-94-7P 522615-98-1P  
522615-99-2P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)  
(spirocyclic compds. containing direct bond between anthracene and  
fluorene rings for organic LED of high luminescent  
efficiency)

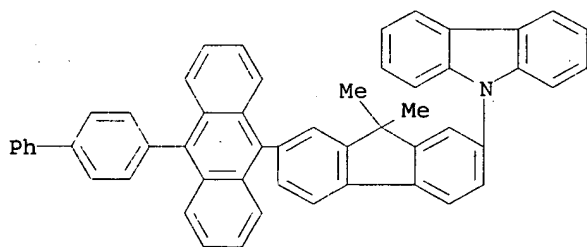
RN 522615-53-8 HCAPLUS

CN 9H-Carbazole, 9-[7-[10-(4-methoxyphenyl)-9-anthracenyl]-9,9-dimethyl-  
9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)



RN 522615-54-9 HCAPLUS

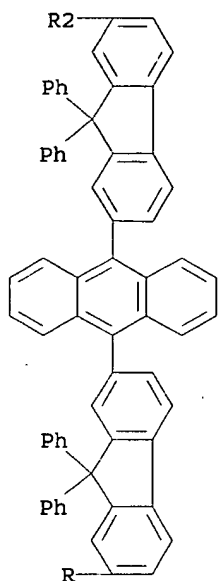
CN 9H-Carbazole, 9-[7-(10-[1,1'-biphenyl]-4-yl)-9-anthracenyl]-9,9-  
dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)



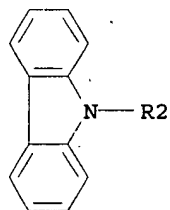
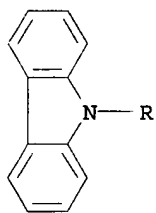
RN 522615-61-8 HCAPLUS

CN 9H-Carbazole, 9,9'-[9,10-anthracenediylbis(9,9-diphenyl-9H-fluorene-  
7,2-diyl)]bis- (9CI) (CA INDEX NAME)

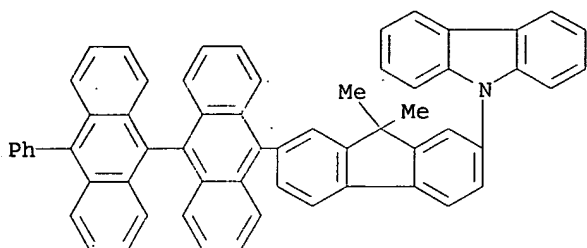
PAGE 1-A



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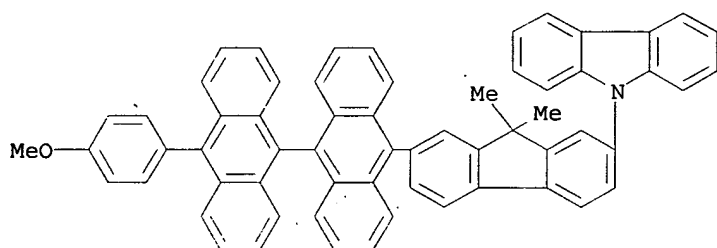


RN 522615-64-1 HCAPLUS  
CN 9H-Carbazole, 9-[9,9-dimethyl-7-(10'-phenyl[9,9'-bianthracen]-10-yl)-9H-fluorene-2-yl]- (9CI) (CA INDEX NAME)



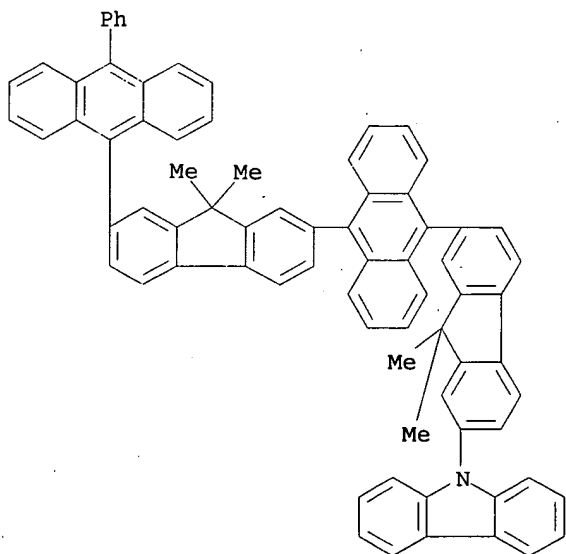
RN 522615-66-3 HCAPLUS

CN 9H-Carbazole, 9-[7-[10'-(4-methoxyphenyl)[9,9'-bianthracen]-10-yl]-9,9-dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)



RN 522615-67-4 HCAPLUS

CN 9H-Carbazole, 9-[7-[10-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

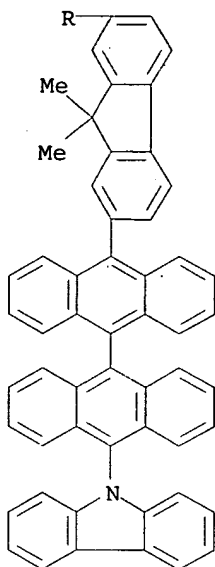


RN 522615-77-6 HCAPLUS

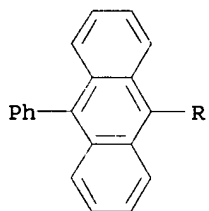
CN 9H-Carbazole, 9-[10'-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl][9,9'-bianthracen]-10-yl]- (9CI) (CA INDEX NAME)



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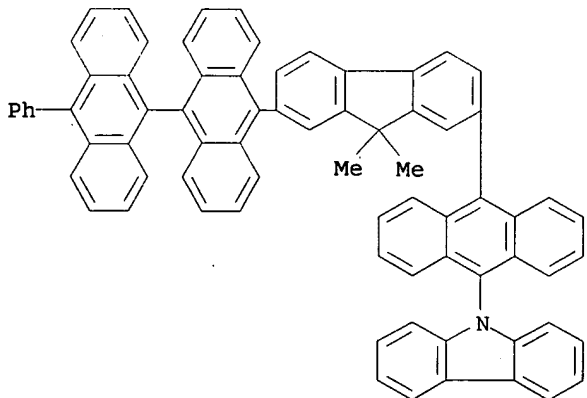


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RN 522615-79-8 HCAPLUS

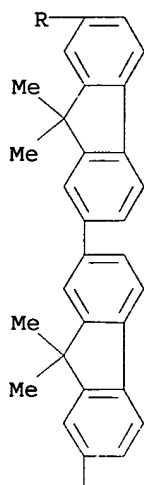
CN 9H-Carbazole, 9-[10-[9,9-dimethyl-7-(10'-phenyl[9,9'-bianthracen]-10-yl)-9H-fluoren-2-yl]-9-anthracenyl]- (9CI) (CA INDEX NAME)



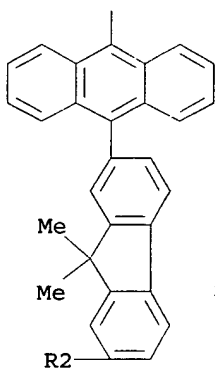
RN 522615-83-4 HCAPLUS

- . CN 9H-Carbazole, 9-[9,9-dimethyl-7-[10-[9,9,9',9'-tetramethyl-7'-[10-(4-methylphenyl)-9-anthracenyl][2,2'-bi-9H-fluoren]-7-yl]-9-anthracenyl]-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

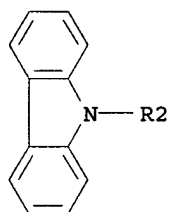
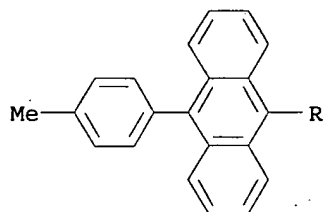
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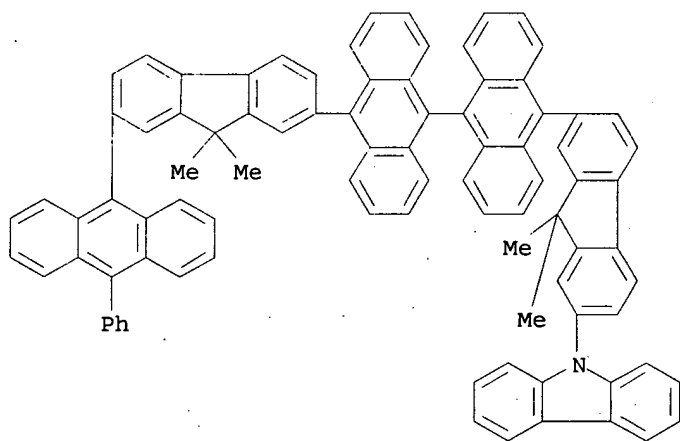


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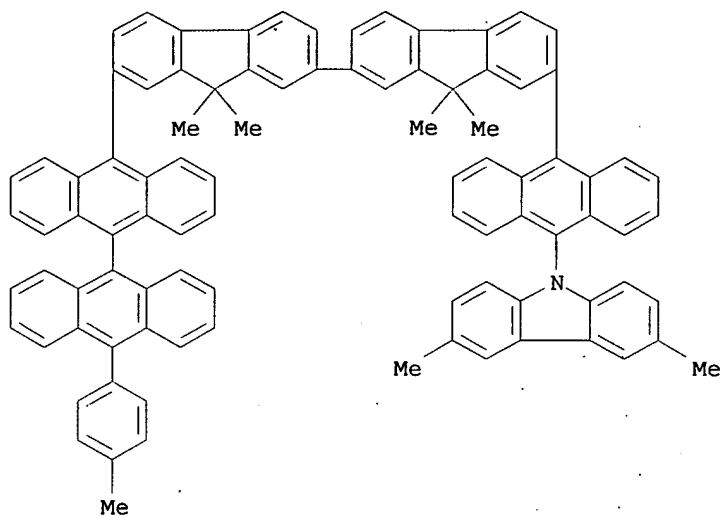
RN 522615-90-3 HCAPLUS

CN 9H-Carbazole, 9-[7-[10'-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl][9,9'-bianthracen]-10-yl]-9,9-dimethyl-9H-fluoren-2-yl]-(9CI) (CA INDEX NAME)



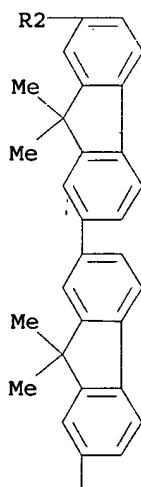
RN 522615-94-7 HCAPLUS

CN 9H-Carbazole, 3,6-dimethyl-9-[10-[9,9,9',9'-tetramethyl-7'-[10'-(4-methylphenyl)[9,9'-bianthracen]-10-yl][2,2'-bi-9H-fluoren]-7-yl]-9-anthracenyl]-(9CI) (CA INDEX NAME)

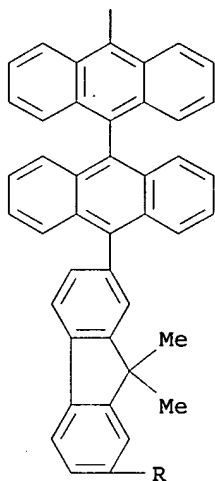


RN 522615-98-1 HCAPLUS  
CN 9H-Carbazole, 9-[9,9-dimethyl-7-[10'-[9,9,9',9'-tetramethyl-7'-(10-phenyl-9-anthracenyl)]-2,2'-bi-9H-fluoren]-7-yl][9,9'-bianthracen]-10-yl]-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

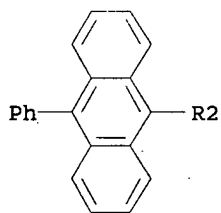
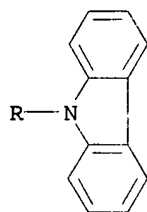
PAGE 1-A



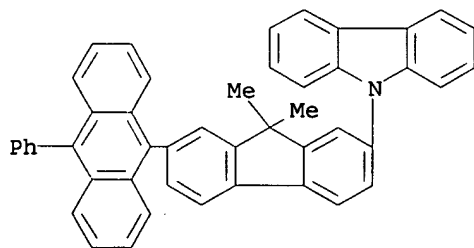
PAGE 2-A



PAGE 3-A



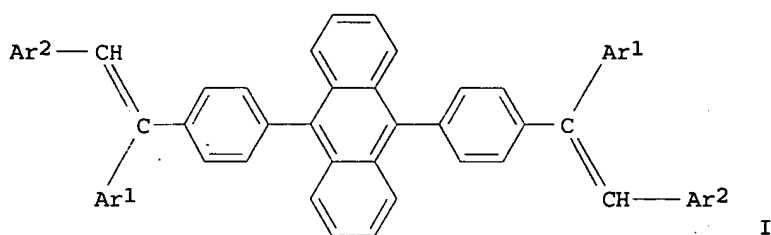
RN 522615-99-2 HCAPLUS  
CN 9H-Carbazole, 9-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)



- IC ICM C07D209-86  
ICS C07D265-38; C07D279-22; C07D279-26; C07D401-10; C09K011-06;  
H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 27
- ST brightness luminescent efficiency **electroluminescent**  
anthracene fluorene
- IT Luminescent substances  
(**electroluminescent**; spirocyclic compds. containing direct bond between anthracene and fluorene rings for organic **LED** of high luminescent efficiency)
- IT **Electroluminescent** devices  
(organic; spirocyclic compds. containing direct bond between anthracene and fluorene rings for organic **LED** of high luminescent efficiency)
- IT 522615-51-6P 522615-52-7P **522615-53-8P**  
**522615-54-9P** 522615-55-0P 522615-56-1P 522615-57-2P  
522615-58-3P 522615-59-4P 522615-60-7P **522615-61-8P**  
522615-62-9P 522615-63-0P **522615-64-1P** 522615-65-2P  
**522615-66-3P** **522615-67-4P** 522615-68-5P  
522615-69-6P 522615-70-9P 522615-71-0P 522615-72-1P  
522615-73-2P 522615-74-3P 522615-75-4P 522615-76-5P  
**522615-77-6P** 522615-78-7P **522615-79-8P**  
522615-80-1P 522615-81-2P 522615-82-3P **522615-83-4P**  
522615-84-5P 522615-85-6P 522615-86-7P 522615-87-8P  
522615-88-9P 522615-89-0P **522615-90-3P** 522615-91-4P  
522615-92-5P 522615-93-6P **522615-94-7P** 522615-95-8P  
522615-96-9P 522615-97-0P **522615-98-1P**  
**522615-99-2P** 522616-00-8P  
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(spirocyclic compds. containing direct bond between anthracene and fluorene rings for organic **LED** of high luminescent efficiency)
- IT 523-27-3, 9,10-Dibromoanthracene 23674-20-6, 9-Bromo-10-phenylanthracene 121848-75-7, 10,10'-Dibromo-9,9'-bianthryl 144981-86-2, 2,7-Diiodo-9,9-dimethylfluorene 145005-98-7  
148873-91-0 158902-11-5 400607-05-8 400607-20-7 400607-26-3  
400607-34-3 400607-35-4 400607-67-2 400607-68-3 400607-71-8  
400607-74-1 400607-75-2 400607-77-4 522616-01-9 522616-02-0  
522616-03-1 522616-04-2 522616-05-3 522616-06-4 522616-07-5  
522616-08-6 522616-09-7 522616-10-0 522616-11-1 522616-12-2  
522616-13-3 522616-14-4 522616-15-5 522616-16-6 522616-17-7  
522616-18-8 522616-19-9 522616-20-2 522616-21-3 522616-22-4  
522616-23-5 522616-24-6 522616-25-7 522616-26-8 522616-27-9  
522616-28-0 522616-29-1 522616-30-4 522616-31-5 522616-32-6  
522616-33-7 522616-34-8 522616-35-9 522616-36-0 522616-37-1  
522616-38-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(spirocyclic compds. containing direct bond between anthracene and fluorene rings for organic **LED** of high luminescent efficiency)

L104 ANSWER 30 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2003:260897 Document No. 138:294694 Blue light  
**emitting** compound and organic **electroluminescent**  
device employing the same as color developing substance. Kim,  
Geon-hee; Kim, Sung-han; Kwon, Soon-ki; Kim, Yun-hi; Shin,  
Dong-cheol; Kim, Hyung-sun; Jeong, Hyun-cheol (Samsung SDI Co.,  
Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2003064246 A1 20030403,  
34 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-187725  
20020701. PRIORITY: KR 2001-48824 20010813.

GI



AB Blue-emitting compds are described by the general formula I (Ar1 and Ar2 = independently aryl groups on which an aryl group, an alkyl group or an alkoxy group having 5-30 carbons may be substituted; C4-24 fused aromatic ring groups, such as naphthalene and anthracene; C5-20 aryl groups, C4-25 alkyl amino group or aryl amino groups; carbazole derivs. having an alkyl group or aryl group of 1-25 carbons; fluorenyl groups having a substituent selected from the group consisting of C2-30 alkyl groups, polyalkoxide groups, alkyl or alkoxy substituted aryl groups in the C-9 position; and aryl groups comprising a silyl group having a substituent selected from the group consisting of C4-35 alkyl groups, aryl groups, and alkyl and alkoxy substituted aryl groups). Organic electroluminescent devices employing the compds. are also described.

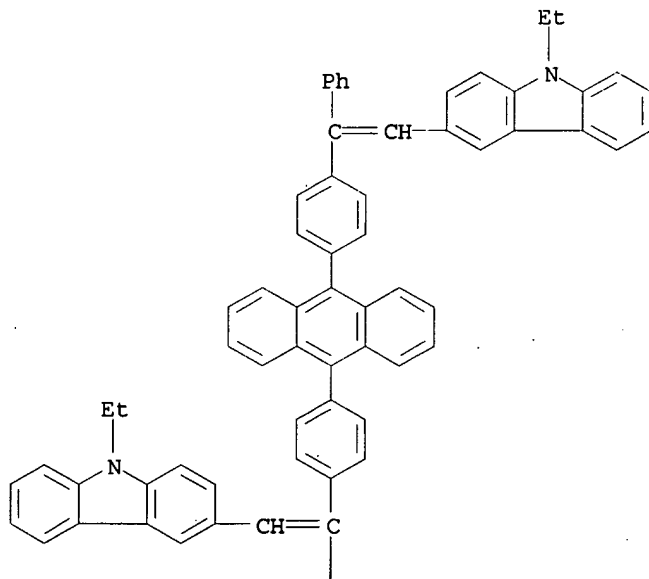
IT 503834-15-9

RL: DEV (Device component use); USES (Uses)  
(blue-emitting diphenylanthracene derivs. and organic electroluminescent devices employing them)

RN 503834-15-9 HCAPLUS

CN 9H-Carbazole, 3,3'-[9,10-anthracenediylbis[4,1-phenylene(2-phenyl-2,1-ethenediyl)]]bis[9-ethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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Ph

IC ICM H05B033-14  
ICS C09K011-06

INCL 428690000; 428917000; 313504000; 252301160

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 76

ST blue emitting phenyl anthracene deriv org **electroluminescent** device

IT Luminescent substances  
(**electroluminescent**; blue-emitting diphenylanthracene derivs. and organic **electroluminescent** devices employing them)

IT **Electroluminescent** devices  
(organic; blue-emitting diphenylanthracene derivs. and organic **electroluminescent** devices employing them)

IT 503834-14-8 503834-15-9 503834-16-0 503834-17-1  
RL: DEV (Device component use); USES (Uses)  
(blue-emitting diphenylanthracene derivs. and organic **electroluminescent** devices employing them)

IT 503834-12-6P 503834-13-7P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(blue-emitting diphenylanthracene derivs. and organic **electroluminescent** devices employing them)

IT 90-90-4, 4-Bromobenzophenone 100-44-7, Benzyl chloride, reactions 121-43-7, Trimethylborate 523-27-3, 9,10-Dibromoanthracene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(blue-emitting diphenylanthracene derivs. and organic **electroluminescent** devices employing them)

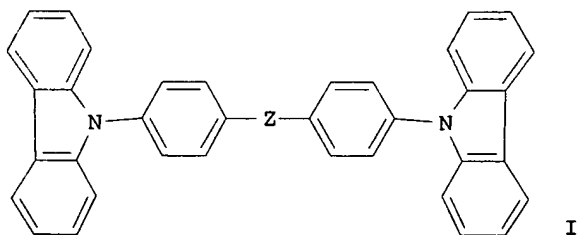
IT 503834-09-1P 503834-10-4P 503834-11-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(blue-emitting diphenylanthracene derivs. and organic **electroluminescent** devices employing them)

IT 123847-85-8,  $\alpha$ -NPD  
RL: DEV (Device component use); USES (Uses)  
(hole transport material; blue-emitting diphenylanthracene derivs. and organic **electroluminescent** devices employing them)

L104 ANSWER 31 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:75532 Document No. 138:144803 Organic **electroluminescent** device and blue luminescence component. Sato, Hideki; Sato, Yoshiharu; Ichinosawa, Akiko (Mitsubishi Chemical Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2003031371 A2 20030131, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-216944 20010717.

GI



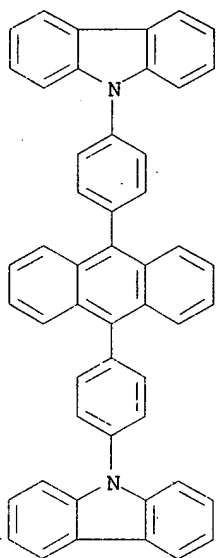


AB The invention refers to an **electroluminescent** device comprising I [Z = divalent substituent; and the Ph and carbazolyl groups may be substituted] as a hole blocking layer.

IT 194296-19-0  
RL: PRP (Properties)  
(organic **electroluminescent** device and blue luminescence component using Ph carbazolyl derivative as hole blocking layer)

RN 194296-19-0 HCAPLUS

CN 9H-Carbazole, 9,9'-(9,10-anthracenediyl-di-4,1-phenylene)bis- (9CI)  
(CA INDEX NAME)



IC ICM H05B033-22  
ICS H05B033-22; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device blue luminescence phenyl carbazolyl hole blocking layer

IT **Luminescence**  
(blue; organic **electroluminescent** device and blue luminescence component using Ph carbazolyl derivative as hole blocking layer)

IT **Electroluminescent** devices  
(organic **electroluminescent** device and blue luminescence component using Ph carbazolyl derivative as hole blocking layer)

IT 160780-82-5 194296-19-0  
RL: PRP (Properties)  
(organic **electroluminescent** device and blue luminescence component using Ph carbazolyl derivative as hole blocking layer)

L104: ANSWER 32 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2003:56356 Document No. 138:98068 **Electroluminescent** styryl compounds and yellow-to-red-emitting **electroluminescent** devices therefrom. Tamano, Michiko; Yauchi, Hiroyuki (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003020477 A2 20030124, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-207189 20010709.

AB Styryl compds. R1R2NAr2(CR3:CR4)mCR5:CR6(CR7:CR8)nAr1 [Ar1 = monovalent cyclic residue; Ar2 = bivalent cyclic residue; R1-R8 = H, cyano, alkyl, aryl (R5 and/or R6 is cyano); n, m = 0-10] and LED (**electroluminescent** devices) having layers of the compds. are

claimed. The devices exhibit long life and high luminance.

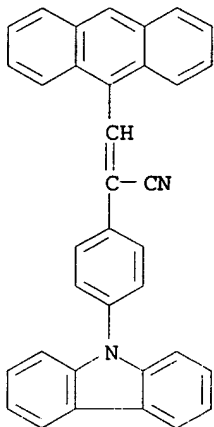
IT 483981-24-4

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(emission layers; **electroluminescent** styryl compds. for yellow-to-red-emitting **LED** with long life and high luminance)

RN 483981-24-4 HCAPLUS

CN Benzeneacetonitrile,  $\alpha$ -(9-anthracenylmethylene)-4-(9H-carbazol-9-yl)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS C09K011-06; C07C255-42; C07D265-38; C07D307-54; C07D333-60; C07D471-04; H05B033-14; C07D209-86; C07D333-24

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 74

ST **electroluminescent** styryl deriv red yellow emission luminance

IT **Electroluminescent** devices

(displays; **electroluminescent** styryl compds. for yellow-to-red-emitting **LED** with long life and high luminance)

IT **Electroluminescent** devices

(**electroluminescent** styryl compds. for yellow-to-red-emitting **LED** with long life and high luminance)

IT Luminescent screens

Luminescent substances

(**electroluminescent**; **electroluminescent** styryl compds. for yellow-to-red-emitting **LED** with long life and high luminance)

IT 21994-54-7P 483981-23-3P 483981-25-5P 483981-26-6P 483981-29-9P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(emission layers; **electroluminescent** styryl compds. for yellow-to-red-emitting **LED** with long life and high luminance)

IT 483981-20-0 483981-21-1 483981-22-2 483981-24-4

483981-27-7 483981-28-8 483981-30-2 483981-31-3 483981-32-4

483981-33-5 483981-34-6 483981-35-7 483981-36-8 483981-37-9

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(emission layers; **electroluminescent** styryl compds. for

yellow-to-red-emitting LED with long life and high luminance)

IT 108062-07-3P 443779-80-4P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(in preparation of electroluminescent styryl compds. for high-luminance and long-life LED)

IT 100-10-7, 4-N,N-Dimethylaminobenzaldehyde 100-52-7, Benzaldehyde, reactions 620-93-9 642-31-9, 9-Formylanthracene 2947-61-7 6203-18-5, 4-N,N-Dimethylaminocinnamaldehyde 16532-79-9, 4-Bromobenzylcyanide

RL: RCT (Reactant); RACT (Reactant or reagent)

(in preparation of electroluminescent styryl compds. for high-luminance and long-life LED)

L104 ANSWER 33 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2002:517963 Document No. 137:85755 Organic light

emitting diode device with three component

emitting layer. Young, Ralph H.; Shi, Jianmin; Tang, Ching W. (Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1221473 A1 20020710, 21 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2001-205032 20011220. PRIORITY: US 2001-753091 20010102.

AB Organic light-emitting devices comprising

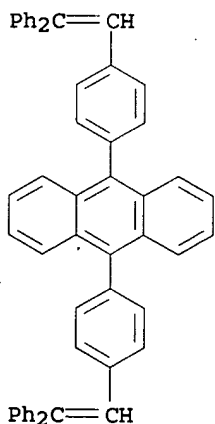
a substrate; an anode and a cathode disposed over the substrate; a luminescent layer, disposed between the anode and the cathode, which includes a host and  $\geq 1$  dopant are described in which the luminescent layer host material is a solid organic material comprising a mixture of  $\geq 2$  components wherein the first component of the mixture is an organic compound that is capable of transporting both electrons and holes and that is substantially non-polar and the second component of the mixture is an organic compound that is more polar than the first component. Preferably, the host material includes a benzenoid compound, especially an anthracene derivative

IT 186412-15-7

RL: DEV (Device component use); USES (Uses)  
(organic light-emitting diodes with three component emitting layers)

RN 186412-15-7 HCAPLUS

CN Anthracene, 9,10-bis[4-(2,2-diphenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
ICS H01L051-30

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 76

ST org **light emitting** diode three component emitting layer

IT **Electroluminescent devices**  
 (organic; organic **light-emitting** diodes with three component emitting layers)

IT 1499-10-1, 9,10-Diphenylanthracene 2085-33-8, Tris(8-hydroxyquinolino)aluminum 122648-99-1 186412-15-7 274905-73-6  
 RL: DEV (Device component use); USES (Uses).  
 (organic **light-emitting** diodes with three component emitting layers)

IT 155306-71-1, C 545T 200052-70-6, DCJTJB  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic **light-emitting** diodes with three component emitting layers)

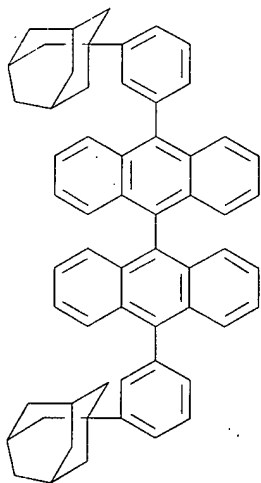
L104 ANSWER 34 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2002:313483 Document No. 136:332524 Organic **electroluminescent** devices. Hosokawa, Chishio; Funahashi, Masakazu (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002124385 A2 20020426, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-319265 20001019.

AB The devices comprise a pair of electrodes interposing an organic **electroluminescent** laminate containing a phosphor layer comprising a polyarom. hydrocarbon ring.

IT 415683-04-4 415683-05-5 415683-10-2  
 RL: DEV (Device component use); USES (Uses)  
 (organic **electroluminescent** devices)

RN 415683-04-4 HCAPLUS

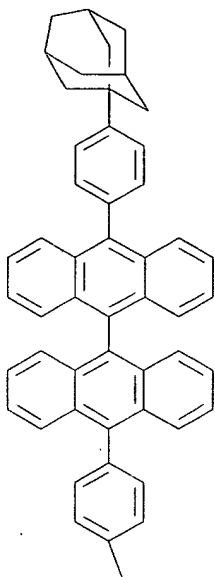
CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 1,1'-([9,9'-bianthracene]-10,10'-diyl)-4,1-phenylene)bis- (9CI) (CA INDEX NAME)



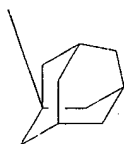
RN 415683-05-5 HCAPLUS

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 1,1'-([9,9'-bianthracene]-10,10'-diyl)-4,1-phenylene)bis- (9CI) (CA INDEX NAME)

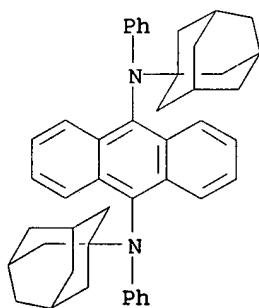
PAGE 1-A



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RN 415683-10-2 HCAPLUS  
 CN 9,10-Anthracenediamine, N,N'-diphenyl-N,N'-bis(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl)- (9CI) (CA INDEX NAME)

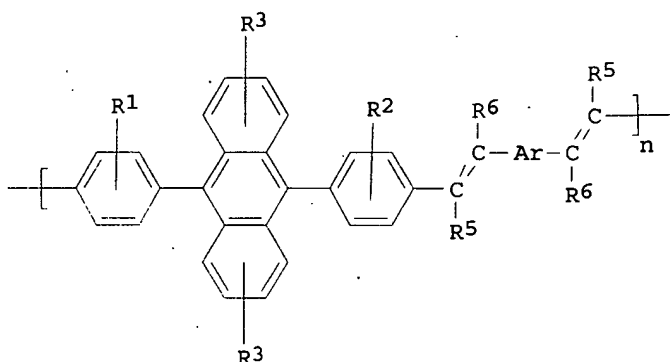


IC ICM H05B033-14  
 ICS C07C013-40; C07C013-615; C09B048-00; C09K011-06  
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST org electroluminescent polyarom phosphor  
 IT Electroluminescent devices  
 Phosphors  
 (organic electroluminescent devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 7439-93-2, Lithium, uses  
 50926-11-9, ITO 65181-78-4, TPD 123847-85-8,  $\alpha$ -NPD  
 274256-88-1 415683-03-3 415683-04-4 415683-05-5  
 415683-06-6 415683-07-7 415683-08-8 415683-09-9  
 415683-10-2 415683-11-3 415683-13-5  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent devices)

L104 ANSWER 35 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2002:238121 Document No. 136:286261 **Electroluminescence**  
 devices. Chen, Shi Min; Shi, Chan Min (Eastman Kodak Co., USA).  
 Jpn. Kokai Tokkyo Koho JP 2002093582 A2 20020329, 88 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-178712 20010613.  
 PRIORITY: US 2000-593073 20000613.

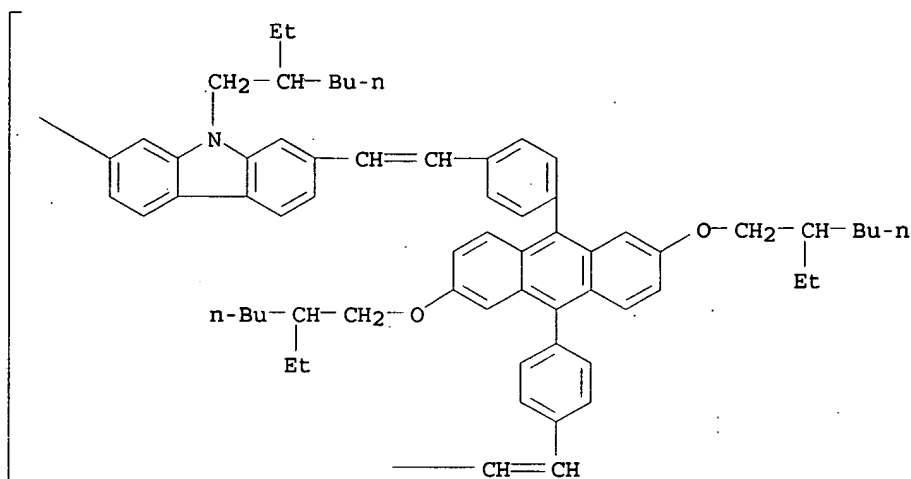
GI



I

AB The devices comprise a phosphor comprising a diphenylanthracene  
 conjugated polymer I (R1-6 = H, C1-24 alkyl, C1-24 alkoxy; C6-28  
 (substituted) aryl; C4-40 (substituted) heteroaryl; R5,6 = cyano).  
 IT 406216-21-5  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescence devices containing  
 diphenylanthracene conjugated polymer)  
 RN 406216-21-5 HCAPLUS  
 CN Poly[[9-(2-ethylhexyl)-9H-carbazole-2,7-diyl]-1,2-eth

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PAGE 1-B

IC ICM H05B033-14  
ICS C08G016-02; C09K011-06  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST **electroluminescence** diphenylanthracene polymer phosphor  
IT Polymers, uses  
RL: DEV (Device component use); USES (Uses)  
(conjugated; organic **electroluminescence** devices containing diphenylanthracene conjugated polymer)  
IT **Electroluminescent** devices  
(organic **electroluminescence** devices)  
IT Anodes  
Cathodes  
(organic **electroluminescence** devices containing diphenylanthracene conjugated polymer)  
IT 37271-44-6 50926-11-9, ITO 406216-11-3 406216-12-4

406216-13-5 406216-14-6 406216-15-7 406216-16-8 406216-17-9  
 406216-18-0 406216-19-1 406216-20-4 406216-21-5  
 406499-00-1 406499-02-3  
 RL: DEV (Device component use); USES (Uses)  
 (organic **electroluminescence** devices containing  
 diphenylanthracene conjugated polymer)

IT 5870-37-1  
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or  
 reagent); USES (Uses)  
 (organic **electroluminescence** devices containing  
 diphenylanthracene conjugated polymer)

IT 4041-19-4P 4898-58-2P 14297-60-0P 65016-62-8P 87736-74-1P  
 102550-78-7P 123863-97-8P 149256-98-4P 149703-84-4P  
 182684-43-1P 187148-75-0P 207799-29-9P 207799-30-2P  
 207799-31-3P 332083-42-8P 369370-61-6P 369370-62-7P  
 369370-66-1P 369370-68-3P 369370-70-7P 380498-82-8P  
 380498-83-9P 380498-84-0P 380498-85-1P 380498-86-2P  
 380498-87-3P 380498-88-4P 406216-08-8P 406216-09-9P  
 406216-10-2P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)  
 (organic **electroluminescence** devices containing  
 diphenylanthracene conjugated polymer)

IT 62-53-3, Aniline, reactions 75-86-5 83-56-7,  
 1,5-Dihydroxynaphthalene 84-59-3, 2,6-Dibromo-1,5-  
 dihydroxynaphthalene 84-60-6, 2,6-Dihydroxyanthraquinone  
 86-73-7, Fluorene 111-25-1, n-Hexylbromide 122-52-1, Triethyl  
 phosphite 581-43-1, 2,6-Dihydroxynaphthalene 591-50-4,  
 Iodobenzene 872-31-1, 3-Bromothiophene 873-75-6, 4-Bromobenzyl  
 alcohol 7789-60-8, Phosphorous tribromide 15629-92-2,  
 [1,3-Bis(diphenylphosphino)propane]dichloronickel 16853-85-3  
 18162-48-6 18908-66-2, 2-Ethylhexyl bromide 26299-14-9,  
 Pyridinium chlorochromate 30525-89-4, Paraformaldehyde  
 90224-21-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (organic **electroluminescence** devices containing  
 diphenylanthracene conjugated polymer)

L104 ANSWER 36 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2002:219090 Document No. 136:386486 Syntheses of vinyl polymers  
 containing phenylanthracene pendants and their application to  
 organic EL device. Shirai, Satoshi; Kido, Junji (Graduate  
 School of Science and Engineering, Yamagata University, Yamagata,  
 992-8510, Japan). Chemistry Letters (3), 386-387 (English) 2002.  
 CODEN: CMLTAG. ISSN: 0366-7022. Publisher: Chemical Society of  
 Japan.

AB Fluorescent vinyl polymers containing 9-phenylanthracene pendants were  
 synthesized from 9-(4-vinylphenyl)anthracene and examined as an  
 emitter layer in organic **electroluminescent** devices. The  
 single layer polymer EL device using the homopolymer  
 emitted green light originating from the excimer  
 of the anthracene units. On the other hand, blue emission was observed  
 from devices using a copolymer with vinylcarbazole.

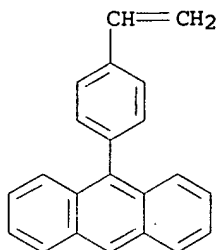
IT 35705-76-1P, N-Vinylcarbazole-9-(4-vinylphenyl)anthracene  
 copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (syntheses of vinyl polymers containing pendant phenylanthracene  
 groups and their application in organic **electroluminescent**  
 devices)

RN 35705-76-1 HCAPLUS  
 CN 9H-Carbazole, 9-ethenyl-, polymer with 9-(4-ethenylphenyl)anthracene  
 (9CI) (CA INDEX NAME)

CM 1

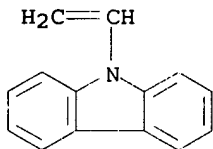


CRN 35244-03-2  
CMF C22 H16



CM 2

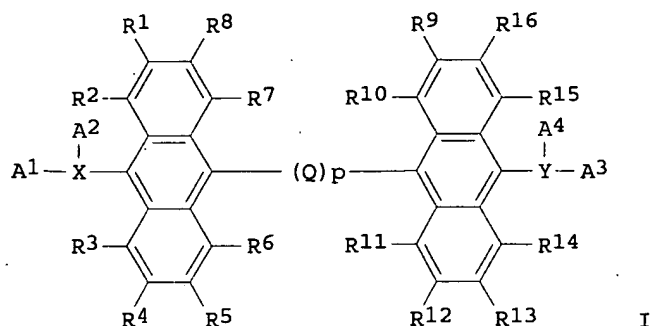
CRN 1484-13-5  
CMF C14 H11 N



- CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 38, 73
- ST fluorescent vinylphenyl anthracene polymer;  
**electroluminescent** device vinylphenyl anthracene polymer
- IT **Electroluminescent** devices  
(syntheses of vinyl polymers containing pendant phenylanthracene groups and their application in organic **electroluminescent** devices)
- IT 35239-23-7P, 9-(4-Vinylphenyl)anthracene homopolymer  
35705-76-1P, N-Vinylcarbazole-9-(4-vinylphenyl)anthracene copolymer  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(syntheses of vinyl polymers containing pendant phenylanthracene groups and their application in organic **electroluminescent** devices)

L104 ANSWER 37 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
2001:730670 Document No. 135:280171 Anthracene derivatives and organic **electroluminescent** devices made by using the same.  
Hosokawa, Chishio; Ikeda, Hidetsugu; Funahashi, Masakazu (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2001072673 A1 20011004, 71 pp. DESIGNATED STATES: W: CN, IN, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP2330 20010323. PRIORITY: JP 2000-90644 20000329; JP 2000-319297 20001019.

GI



AB Anthracene derivs. (I); and organic electroluminescent (EL) devices each having at least an organic light-emitting layer sandwiched between a pair of electrodes and containing the derivs. [wherein X and Y are each a trivalent group derived from an aromatic ring; (1) A1 to A4 are each aryl or a monovalent heterocyclic group or (2) A1 and A3 are each H, and A2 and A4 are each styryl whose Ph moiety may be substituted and which may be substituted by C1-30 alkyl at the  $\alpha$ - or  $\beta$ -position; R1 to R16 are each H, halo, cyano, nitro, alkyl, or the like; Q is arylene or the like; and p is 0, 1, or 2]. The anthracene derivs. exhibit high light emitting efficiency and heat resistance, when used as the light-emitting constituent of organic EL devices.

IT 363609-62-5

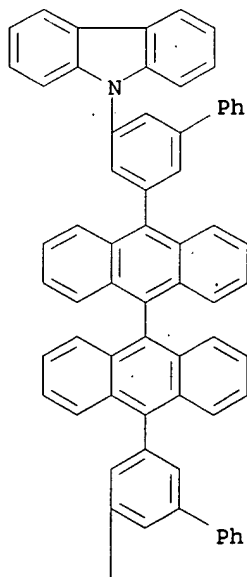
RL: DEV (Device component use); USES (Uses)

(anthracene derivs. and organic electroluminescent devices made by using the same)

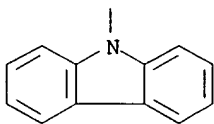
RN 363609-62-5 HCAPLUS

CN 9H-Carbazole, 9,9'-[[9,9'-bianthracene]-10,10'-diylbis([1,1'-biphenyl]-5,3-diyl)]bis- (9CI) (CA INDEX NAME)

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PAGE 2-A



IC ICM C07C015-27  
 ICS C07C013-547; C07C013-19; C07C255-51; C07C015-60; C07C013-45;  
 C07D215-06; C07D285-12; C07D207-32; C07D241-42; C07D333-68;  
 C07D209-86; C07D213-06; C07D223-28; C07D223-26; C07D249-02;  
 C09K011-06; H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25

ST anthracene deriv org **electroluminescent** device

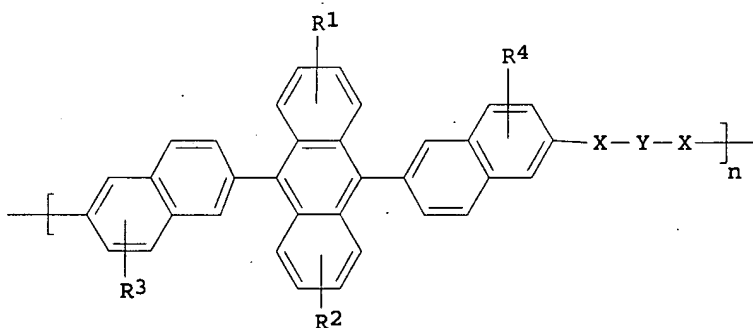
IT **Electroluminescent** devices  
 Thermal resistance  
 (anthracene derivs. and organic **electroluminescent** devices made by using the same)

IT 120-12-7, Anthracene, uses 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 50926-11-9, ITO 65181-78-4, TPD 123847-85-8,  $\alpha$ -NPD 231606-50-1  
 363609-60-3 363609-61-4 **363609-62-5** 363609-63-6  
 363609-64-7 363609-65-8 363609-66-9 363609-67-0 363609-68-1  
 363609-69-2 363609-70-5 363609-71-6 363609-72-7  
 RL: DEV (Device component use); USES (Uses)  
 (anthracene derivs. and organic **electroluminescent** devices made by using the same)

IT 7439-93-2, Lithium, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (anthracene derivs. and organic **electroluminescent** devices made by using the same)

L104 ANSWER 38 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN.  
 2001:297576 Document No. 134:346283 **Electroluminescent** devices having naphthylanthracene-based polymers. Shi, Jianmin; Zheng, Shiyong (Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1094101 A2 20010425, 56 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-203504 20001009. PRIORITY: US 1999-421980 19991020.

GI



I

AB **Electroluminescent** devices comprising an anode, a cathode, and polymer luminescent materials disposed between the anode and

cathode are described in which the polymeric luminescent materials include 9,10-di-(2-naphthyl)anthracene-based polymers described by the general formula I (R1-4 = independently selected H, alkyl, C1-24 alkoxy, C6-28 (un)substituted aryl, C4-40 (un)substituted heteroaryl, F, Cl, Br, cyano, or nitro groups; X = a linking group; and Y includes  $\geq 1$  comonomer units that are (un)substituted alkyl, alkenyl, aryl, heteroaryl, or conjugated groups).

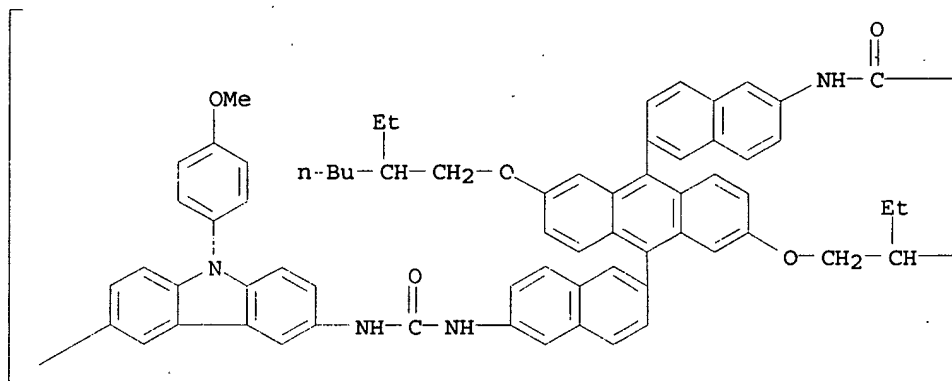
IT 337369-64-9

RL: DEV (Device component use); USES (Uses)  
(electroluminescent devices using naphthylanthracene-based polymers)

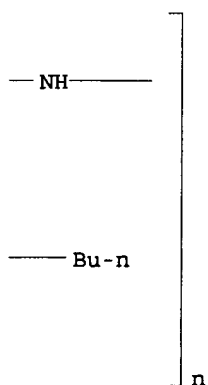
RN 337369-64-9 HCAPLUS

CN Poly[[9-(4-methoxyphenyl)-9H-carbazole-3,6-diyl]iminocarbonylimino-2,6-naphthalenediyl[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]-2,6-naphthalenediyliminocarbonylimino] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C09K011-06

ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

ST naphthyl anthracene polymer electroluminescent device

IT Electroluminescent devices

(electroluminescent devices using naphthylanthracene-

based polymers)

IT Phosphors

(electroluminescent; electroluminescent

devices using naphthylanthracene-based polymers)

IT	337368-77-1	337368-80-6	337368-87-3	337368-91-9	337368-95-3
	337369-10-5	337369-13-8	337369-16-1	337369-19-4	337369-23-0
	337369-27-4	337369-36-5	337369-46-7	337369-49-0	337369-55-8
	337369-58-1	337369-61-6	337369-64-9	337369-67-2	
	337369-69-4	337369-71-8	337369-73-0	337369-75-2	337369-77-4
	337369-78-5	337369-79-6	337369-80-9	337369-82-1	337369-86-5
	337369-88-7	337369-90-1	337369-92-3	337369-94-5	337369-95-6
	337369-97-8	337369-99-0	337370-01-1	337370-03-3	337370-05-5
	337370-07-7	337370-08-8	337370-10-2	337370-12-4	337370-13-5
	337370-14-6	337370-16-8	337370-18-0	337370-20-4	337370-21-5
	337370-23-7	337370-25-9	337370-27-1	337370-29-3	337370-31-7
	337370-33-9	337370-35-1	337370-37-3	337370-39-5	337370-41-9
	337370-43-1	337370-45-3	337370-47-5	337370-49-7	337370-51-1
	337370-53-3	337370-55-5	337370-57-7	337370-59-9	337370-69-1
	337370-72-6	337370-75-9	337370-78-2	337370-84-0	337370-87-3
	337370-90-8	337370-93-1	337370-97-5	337371-00-3	337371-01-4
	337371-04-7	337371-08-1	337371-10-5	337371-11-6	337371-13-8
	337371-14-9	337371-16-1	337371-18-3	337371-20-7	337371-24-1
	337371-26-3	337371-29-6	337371-32-1	337371-35-4	337371-38-7
	337371-40-1	337371-42-3	337371-45-6	337371-47-8	337371-49-0
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	337371-82-1	337371-86-5	337371-87-6	337371-88-7	337371-92-3
	337371-96-7	337371-97-8	337371-99-0	337372-02-8	337372-05-1
	337372-09-5	337372-12-0	337372-15-3	337372-19-7	337372-22-2
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	337372-67-5	337372-70-0	337372-73-3	337372-76-6	337372-79-9
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	337459-22-0	337459-37-7	337459-66-2	337459-67-3	337459-68-4
	337459-70-8	337459-71-9	337459-79-7	337459-80-0	337459-81-1
	337459-82-2	337459-83-3	337459-84-4	337459-85-5	337459-86-6
	337459-87-7	337459-88-8	337459-92-4	337459-93-5	337459-94-6
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	337460-25-0	337460-26-1	337460-27-2	337460-28-3	337460-29-4
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	337460-56-7	337460-57-8	337460-58-9	337460-62-5	337460-63-6
	337460-69-2	337460-71-6	337460-72-7	337460-75-0	337460-76-1
	337460-77-2	337460-78-3	337460-79-4	337460-97-6	

RL: DEV (Device component use); USES (Uses)

(electroluminescent devices using naphthylanthracene-based polymers)

IT	337461-03-7	337461-04-8	337461-06-0	337461-07-1	337461-08-2
	337461-09-3	337461-10-6	337461-11-7	337461-13-9	337461-14-0
	337461-15-1	337461-16-2	337461-18-4	337461-19-5	337461-20-8
	337461-21-9	337461-22-0	337461-24-2	337461-25-3	337461-26-4
	337463-04-4	337463-67-9	337464-26-3	337464-27-4	337464-28-5
	337464-29-6	337464-30-9	337464-31-0	337464-32-1	337464-44-5
	337464-45-6	337464-46-7	337464-47-8	337464-48-9	337464-60-5
	337464-61-6	337465-00-6	337465-01-7	337465-03-9	337465-04-0
	337465-12-0	337465-14-2	337465-16-4	337465-17-5	337465-19-7
	337465-22-2	337465-23-3	337465-44-8	337465-45-9	337465-98-2

RL: DEV (Device component use); USES (Uses)

(electroluminescent devices using naphthylanthracene-based polymers)

IT 337368-83-9P 337368-99-7P 337369-03-6P 337369-07-0P  
337369-31-0P 337369-41-2P 337369-52-5P 337369-84-3P  
337370-80-6P 337371-21-8P 337371-74-1P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(electroluminescent devices using naphthylanthracene-based polymers)

IT 18798-85-1P 18800-99-2P 62375-58-0P 99964-58-6P 106679-32-7P  
235099-48-6P 332083-42-8P 332083-43-9P 332083-44-0P  
332083-45-1P 332083-46-2P 337369-40-1P 337370-61-3P  
337370-62-4P 337370-63-5P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(electroluminescent devices using naphthylanthracene-based polymers)

IT 84-60-6, 2,6-Dihydroxyanthraquinone 98-06-6, tert-Butyl benzene  
106-89-8, Epichlorohydrin, reactions 121-43-7, Trimethyl borate  
126-30-7, 2,2-Dimethylpropane-1,3-diol 143-15-7, 1-Bromododecane  
523-27-3, 9,10-Dibromoanthracene 628-13-7, Pyridine hydrochloride  
5111-65-9, 2-Bromo-6-methoxy naphthalene 7439-95-4, Magnesium,  
reactions 15231-91-1, 6-Bromo-2-hydroxynaphthalene 18908-66-2,  
2-Ethylhexyl bromide 25620-62-6, Dibromoethane 32703-79-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(electroluminescent devices using naphthylanthracene-based polymers)

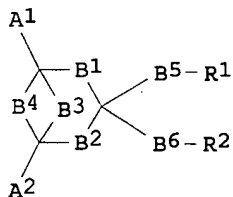
IT 38046-82-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(electroluminescent devices using naphthylanthracene-based polymers)

L104 ANSWER 39 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2001:280653 Document No. 134:302846 **Electroluminescence**  
component. Tanaka, Hiromitsu; Mouri, Makoto; Takeuchi, Hisato;  
Tokito, Seishi (Toyota Central Research and Development  
Laboratories, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2001110572 A2  
20010420, 32 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2000-237442 20000804. PRIORITY: JP 1999-221653 19990804.

GI



I

AB The invention refers to an **electroluminescent** device comprising two electrodes and an **electroluminescent** layer containing I [A1,2 = functional group; B1-6 = direct bonds or divalent functional groups; A1,2 = triphenylamine, coumarin, or oxadiazole derivative groups having hole and electron transport and luminescent properties].

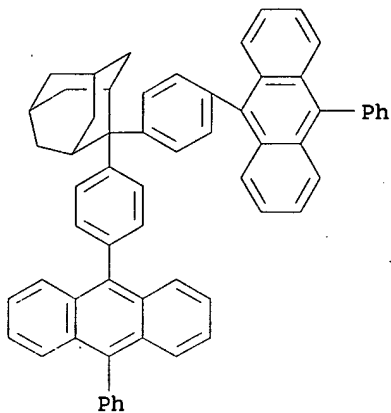
IT 334658-76-3P 334658-78-5P 334658-79-6P  
334658-80-9P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(electroluminescence component)

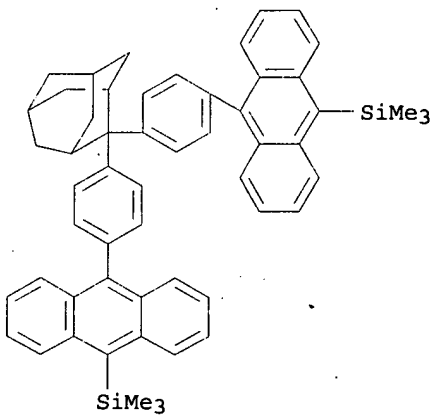
RN 334658-76-3 HCAPLUS

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 2,2-bis[4-(10-phenyl-9-anthracenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 334658-78-5 HCAPLUS

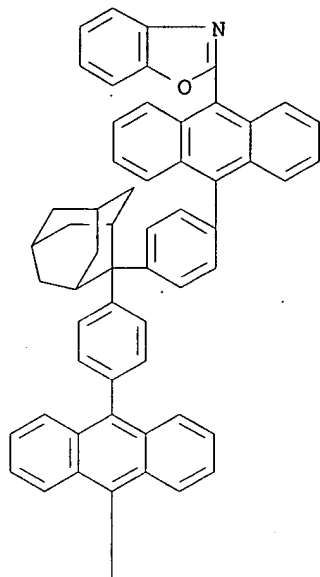
CN Silane, [tricyclo[3.3.1.1<sup>3,7</sup>]decylidenebis(4,1-phenylene-10,9-anthracenediyl)]bis(trimethyl- (9CI) (CA INDEX NAME)



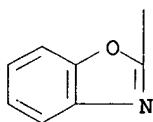
RN 334658-79-6 HCAPLUS

CN Benzoxazole, 2,2'-[tricyclo[3.3.1.1<sup>3,7</sup>]decylidenebis(4,1-phenylene-10,9-anthracenediyl)]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



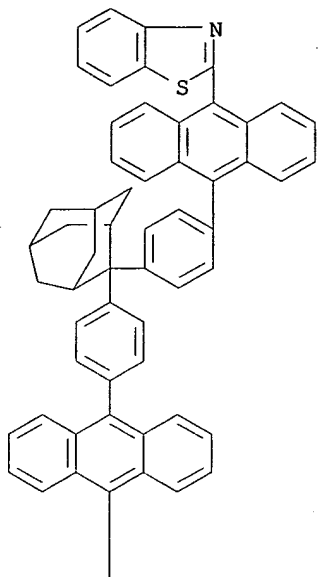
PAGE 2-A



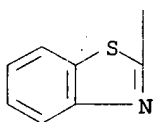
RN 334658-80-9 HCAPLUS  
CN Benzothiazole, 2,2'-[tricyclo[3.3.1.1.3]decylidenebis(4,1-phenylene-10,9-anthracenediyl)]bis- (9CI) (CA INDEX NAME)



PAGE 1-A



PAGE 2-A



IC ICM H05B033-14  
ICS C09K011-06; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescence** device adamantane

IT **Electroluminescent** devices  
(**electroluminescence** component)

IT 164396-23-0P 164396-24-1P 334658-67-2P 334658-68-3P  
334658-69-4P 334658-70-7P 334658-71-8P 334658-72-9P  
334658-73-0P 334658-76-3P 334658-78-5P  
334658-79-6P 334658-80-9P 334658-85-4P  
334658-86-5P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(**electroluminescence** component)

IT 62-53-3, Aniline, reactions 87-62-7, 2,6-Dimethylaniline  
90-14-2, 1-Iodonaphthalene 95-53-4, o-Toluidine, reactions  
121-44-8, Triethylamine, reactions 142-04-1, Aniline hydrochloride  
591-50-4, Iodobenzene 636-21-5, o-Toluidine hydrochloride  
700-58-3, 2-Adamantanone 14221-01-3 21436-98-6,  
2,6-Dimethylaniline hydrochloride 68572-87-2 89811-60-9  
164461-18-1 246546-06-5 334658-75-2 334658-82-1 334658-83-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**electroluminescence** component)

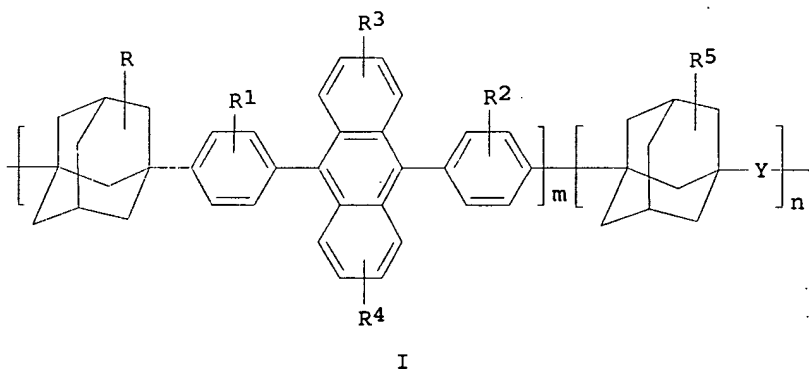
IT 334658-84-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)  
(**electroluminescence** component)

L104 ANSWER 40 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2001:246603 Document No. 134:287603 **Electroluminescent**

devices having phenylanthracene-based polymers. Zheng, Shiyang;  
Shi, Jianmin; Klubek, Kevin P. (Eastman Kodak Company, USA). Eur.  
Pat. Appl. EP 1088875 A2 20010404, 37 pp. DESIGNATED STATES: R:  
AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE,  
SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP  
2000-203196 20000914. PRIORITY: US 1999-410767 19991001.

GI



AB **Electroluminescent** devices comprising an anode, a cathode, and polymer luminescent materials disposed between the anode and cathode are described in which the polymeric luminescent material include (9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers described by the general formula I (R, R1, R2, R3, R4, and R5 = individually selected H, C1-24 alkyl or C1-24 alkoxy, (un)substituted C6-28 aryl, (un)substituted C4-40 heteroaryl groups, or F, Cl, Br, a cyano group, or a nitro group;  $n/(m+n) = 0$  to 1; m and n are integers but m cannot be 0; and Y are divalent linking groups).

IT 332083-47-3P 332083-48-4P 332083-49-5P  
332083-50-8P 332083-51-9P 332083-52-0P  
332083-53-1P 332083-54-2P 332083-55-3P  
332083-56-4P

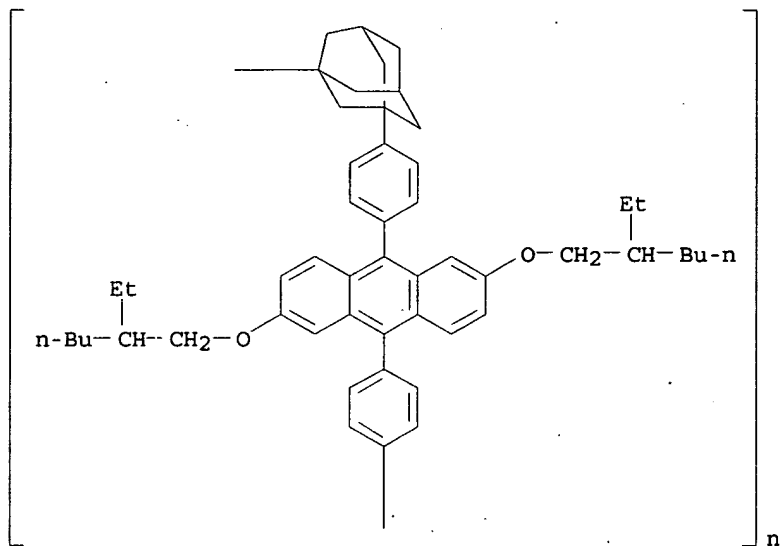
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(organic **electroluminescent** devices using

9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)

RN 332083-47-3 HCAPLUS

CN Poly[tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diyl-1,4-phenylene[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]-1,4-phenylene] (9CI) (CA INDEX NAME)



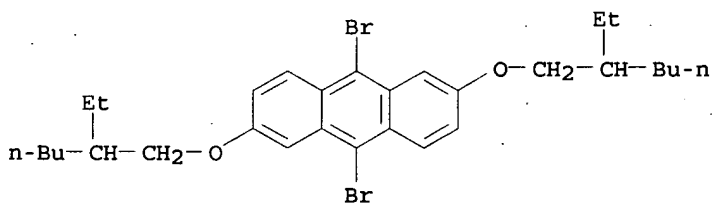
RN 332083-48-4 HCAPLUS

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.1.3]decane-1,3-diyl-di-4,1-phenylene)bis[5,5-dimethyl-, polymer with 9,10-dibromo-2,6-bis[(2-ethylhexyl)oxy]anthracene and 2,7-dibromo-9,9-bis(4-methoxyphenyl)-9H-fluorene (9CI) (CA INDEX NAME)

CM 1

CRN 332083-44-0

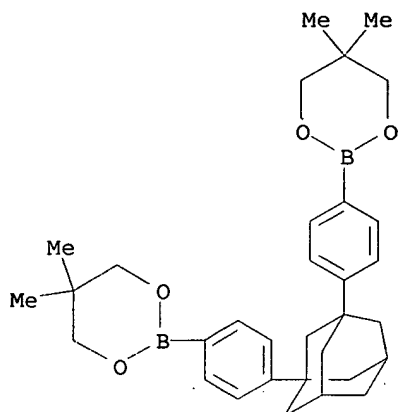
CMF C30 H40 Br2 O2



CM 2

CRN 269412-04-6

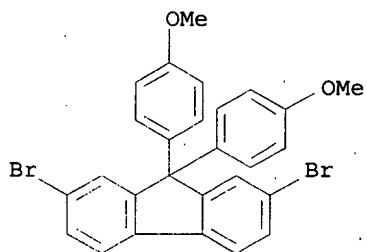
CMF C32 H42 Br2 O4



CM 3

CRN 210347-59-4

CMF C27 H20 Br2 O2



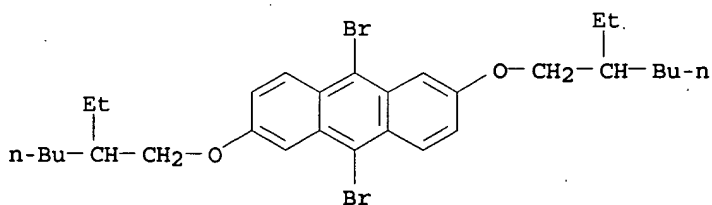
RN 332083-49-5 HCAPLUS

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.1.3]decane-1,3-diyl-di-4,1-phenylene)bis[5,5-dimethyl-, polymer with 2,6-bis[2-(4-bromophenyl)ethenyl]-1,5-bis(hexyloxy)naphthalene and 9,10-dibromo-2,6-bis[(2-ethylhexyl)oxy]anthracene (9CI) (CA INDEX NAME)

CM 1

CRN 332083-44-0

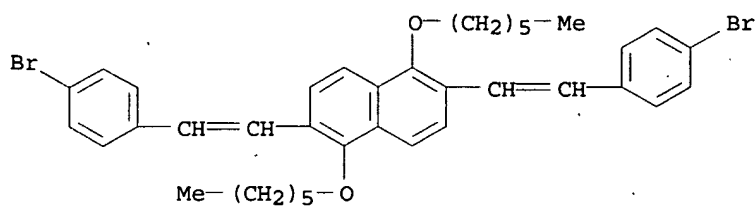
CMF C30 H40 Br2 O2



CM 2

CRN 269729-93-3

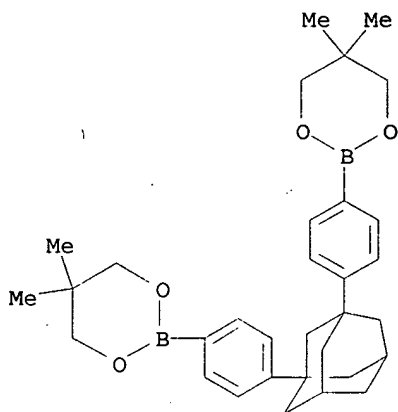
CMF C38 H42 Br2 O2



CM 3

CRN 269412-04-6

CMF C32 H42 B2 O4



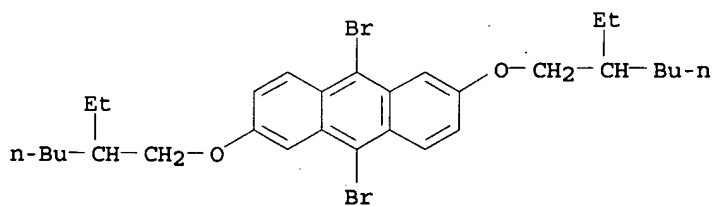
RN 332083-50-8 HCAPLUS

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.1.3]decane-1,3-diyl-di-4,1-phenylene)bis[5,5-dimethyl-, polymer with 1,4-dibromobenzene and 9,10-dibromo-2,6-bis[(2-ethylhexyl)oxy]anthracene (9CI) (CA INDEX NAME)

CM 1

CRN 332083-44-0

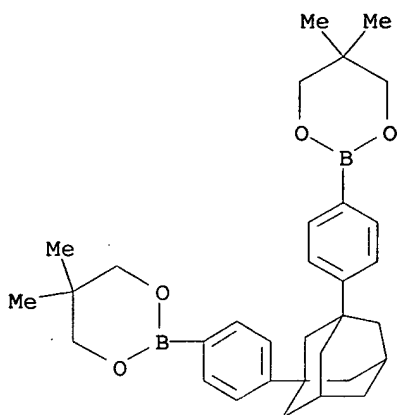
CMF C30 H40 Br2 O2



CM 2

CRN 269412-04-6

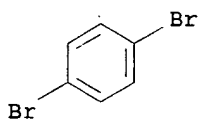
CMF C32 H42 B2 O4



CM 3

CRN 106-37-6

CMF C6 H4 Br2



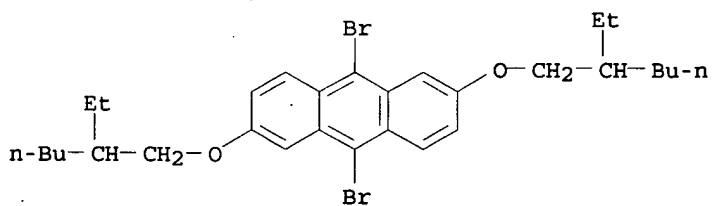
RN 332083-51-9 HCAPLUS

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.1.3]decane-1,3-diyl-di-4,1-phenylene)bis[5,5-dimethyl-, polymer with 9,10-dibromo-2,6-bis[(2-ethylhexyl)oxy]anthracene and 5,5'-dibromo-2,2'-bithiophene (9CI)  
(CA INDEX NAME)

CM 1

CRN 332083-44-0

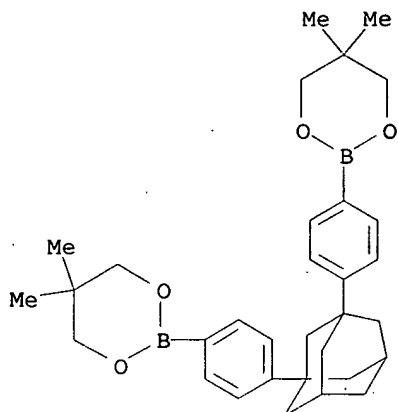
CMF C30 H40 Br2 O2



CM 2

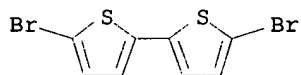
CRN 269412-04-6

CMF C32 H42 Br2 O4



CM 3

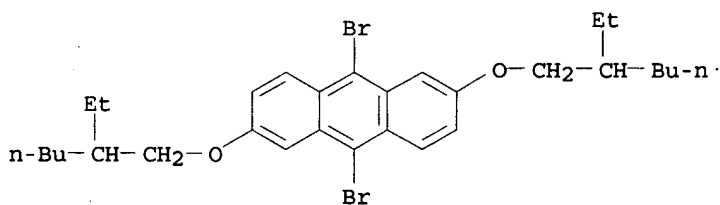
CRN 4805-22-5  
CMF C8 H4 Br2 S2



RN 332083-52-0 HCAPLUS  
CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diyl-di-4,1-phenylene)bis[5,5-dimethyl-, polymer with 9,10-dibromo-2,6-bis[(2-ethylhexyl)oxy]anthracene and 2,5-dibromothiophene (9CI) (CA INDEX NAME)

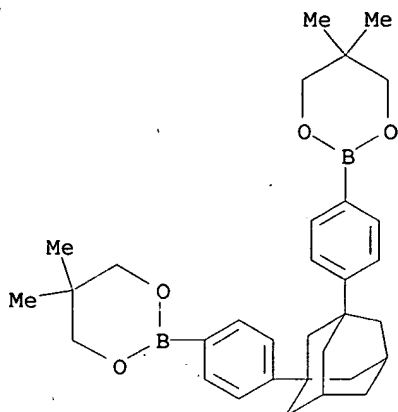
CM 1

CRN 332083-44-0  
CMF C30 H40 Br2 O2



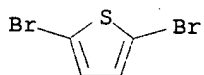
CM 2

CRN 269412-04-6  
CMF C32 H42 B2 O4



CM 3

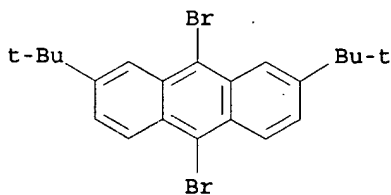
CRN 3141-27-3  
 CMF C4 H2 Br2 S



RN 332083-53-1 HCAPLUS  
 CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diyl-di-4,1-phenylene)bis[5,5-dimethyl-, polymer with 9,10-dibromo-2,6-bis(1,1-dimethylethyl)anthracene and 9,10-dibromo-2,7-bis(1,1-dimethylethyl)anthracene. (9CI) (CA INDEX NAME)

CM 1

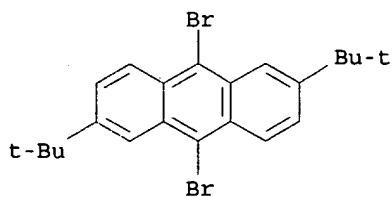
CRN 332083-46-2  
 CMF C22 H24 Br2



CM 2

CRN 332083-45-1  
 CMF C22 H24 Br2

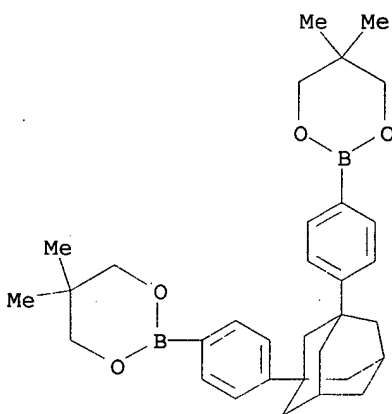




CM 3

CRN 269412-04-6

CMF C32 H42 B2 O4



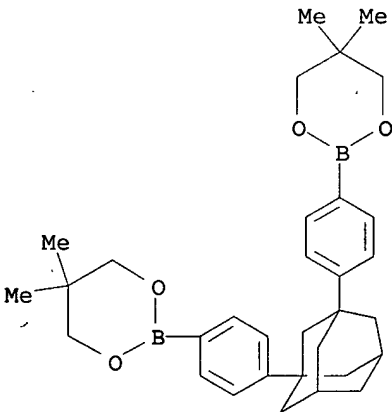
RN 332083-54-2 HCAPLUS

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.1.3]decane-1,3-diyl-di-4,1-phenylene)bis[5,5-dimethyl-, polymer with 9,10-dibromoanthracene (9CI) (CA INDEX NAME)

CM 1

CRN 269412-04-6

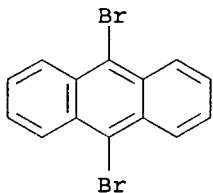
CMF C32 H42 B2 O4



CM 2

CRN 523-27-3

CMF C14 H8 Br2



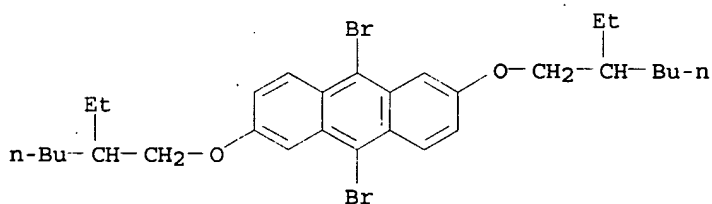
RN 332083-55-3 HCAPLUS

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diyl-di-4,1-phenylene)bis[5,5-dimethyl-, polymer with 9,10-dibromo-2,6-bis[(2-ethylhexyl)oxy]anthracene (9CI) (CA INDEX NAME)

CM 1

CRN 332083-44-0

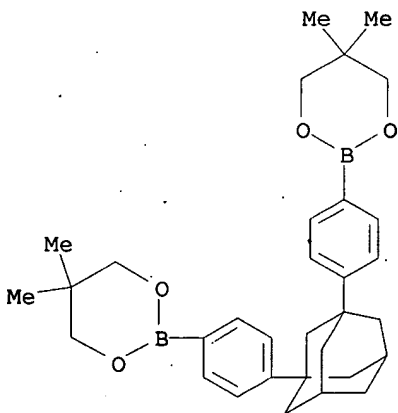
CMF C30 H40 Br2 O2



CM 2

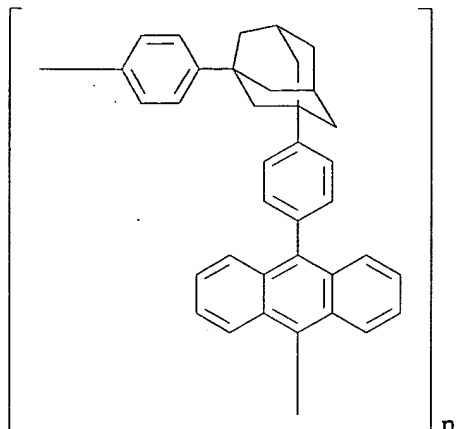
CRN 269412-04-6

CMF C32 H42 B2 O4



RN 332083-56-4 HCAPLUS

CN Poly(tricyclo[3.3.1.1.3,7]decane-1,3-diyl-1,4-phenylene-9,10-anthracenediyl-1,4-phenylene) (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 76  
 ST org **electroluminescent** device adamantanyl phenyl phenylanthracene polymer  
 IT Phosphors  
 (electroluminescent; organic electroluminescent devices using 9-(4-adamantan-1-yl)phenyl)-10-phenylanthracene-based polymers)  
 IT **Electroluminescent devices**  
 (organic; organic electroluminescent devices using 9-(4-adamantan-1-yl)phenyl)-10-phenylanthracene-based polymers)  
 IT 332083-47-3P 332083-48-4P 332083-49-5P  
 332083-50-8P 332083-51-9P 332083-52-0P  
 332083-53-1P 332083-54-2P 332083-55-3P  
 332083-56-4P 332344-74-8P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (organic electroluminescent devices using 9-(4-adamantan-1-yl)phenyl)-10-phenylanthracene-based polymers)  
 IT 4805-22-5P, 5,5'-Dibromo-2,2'-bithiophene 18798-85-1P  
 18800-99-2P 31592-26-4P 40189-21-7P, 1,3-Diphenyladamantane  
 62375-58-0P 83102-75-4P 99964-58-6P 117766-40-2P  
 182684-43-1P 207799-29-9P 210347-59-4P 269412-04-6P  
 269729-93-3P 332083-42-8P 332083-43-9P 332083-44-0P  
 332083-45-1P 332083-46-2P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (organic electroluminescent devices using 9-(4-adamantan-1-yl)phenyl)-10-phenylanthracene-based polymers)  
 IT 83-56-7, 1,5-Dihydroxynaphthalene 84-60-6, 2,6-Dihydroxyanthraquinone 98-06-6, tert-Butyl benzene 492-97-7, 2,2'-Bithiophene 768-90-1, 1-Bromoadamantane 2712-78-9, Bis[(trifluoroacetoxy)iodo]benzene 3236-71-3 18908-66-2, 2-Ethylhexyl bromide 32703-79-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (organic electroluminescent devices using 9-(4-adamantan-1-yl)phenyl)-10-phenylanthracene-based polymers)  
 IT 38186-51-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (organic electroluminescent devices using 9-(4-adamantan-1-yl)phenyl)-10-phenylanthracene-based polymers)

L104 ANSWER 41 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

2001:228988 Document No. 134:273305 Organic

**electroluminescence** and organic luminous medium. Hosokawa, Chishio; Higashi, Hisahiro; Fukuoka, Kenichi; Ikeda, Hidetsugu (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2001021729 A1 20010329, 41 pp. DESIGNATED STATES: W: CN, IN, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP6402 20000920. PRIORITY: JP 1999-267460 19990921.

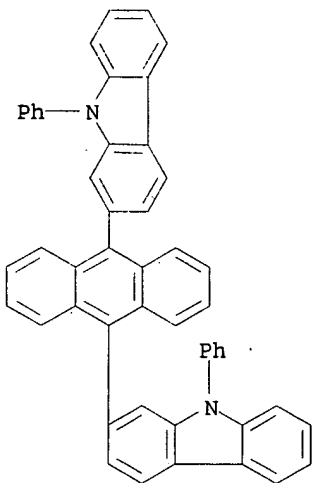
AB The invention refers to a organic **electroluminescent** device comprising a mono-, di- or tri- styryl amine, and at least one of the anthracene derivs., A1LA1 [A1,2 = (un)substituted mono Ph anthryl, or (un)substituted di-Ph anthryl; L = single bond or divalent chain] and A3AnA4 [An = (un)substituted anthracene; A3,4 = (un)substituted condensed aromatic ring, or (un)substituted C12+ chain uncondensed aryl ring].

IT 331749-30-5

RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescence** and organic  
**luminous** medium)

RN 331749-30-5 HCAPLUS

CN 9H-Carbazole, 2,2'-(9,10-anthracenediyl)bis[9-phenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device anthracene

IT **Electroluminescent** devices

(organic **electroluminescence** and organic  
**luminous** medium)

IT 55035-42-2 55035-43-3 119564-21-5 122648-99-1 167022-38-0  
172285-76-6 172285-79-9 205930-46-7 209980-47-2 219785-99-6  
221453-32-3 221453-38-9 229479-60-1 279672-57-0 331749-28-1  
331749-29-2 331749-30-5 331749-31-6 331749-32-7  
331749-33-8 331749-34-9 331749-35-0

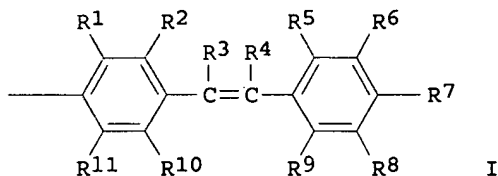
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescence** and organic  
**luminous** medium)

L104 ANSWER 42 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

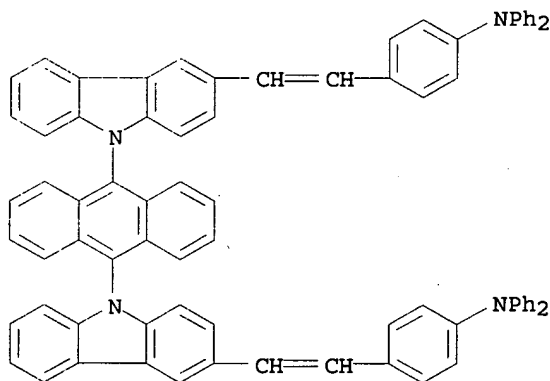
1999:189076 Document No. 130:259332 Organic **electroluminescent** device. Ishikawa, Hitoshi; Higashiguchi, Itaru; Oda, Atsushi (NEC Corp., Japan). Jpn. Kokai Tokkyo Koho JP 11074079 A2 19990316

Heisei, 30 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1998-148778 19980529. PRIORITY: JP 1997-163586 19970620.

GI



- AB An organic **electroluminescent** device comprises  
diphenylaminoarylene represented by Ar<sub>2</sub>Ar<sub>3</sub>NAr<sub>1</sub>NAr<sub>4</sub>Ar<sub>5</sub> [ Ar<sub>1</sub> = C<sub>5</sub>-30  
arylene; Ar<sub>2</sub>-5 = C<sub>6</sub>-20 aryl groups including at least one styryl  
group represented by I; R<sub>1</sub>-11 = H, halo, OH, etc.], and  
triphenylamine represented by (R<sub>14</sub>Ar<sub>6</sub>)(R<sub>15</sub>Ar<sub>7</sub>)(R<sub>16</sub>Ar<sub>8</sub>)N [Ar<sub>6</sub>-8 =  
C<sub>6</sub>-30 arylene; R<sub>14</sub>-16 = H, halo, OH, etc.] as a hole transporting  
material.
- IT **221453-54-9**  
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device)
- RN 221453-54-9 HCAPLUS
- CN Benzenamine, 4,4'-[9,10-anthracenediylbis(9H-carbazole-9,3-diyl-2,1-ethenediyl)]bis[N,N-diphenyl- (9CI) (CA INDEX NAME)



- IC ICM H05B033-14  
ICS C09K011-06; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST org **electroluminescent** device diphenylaminoarylene  
triphenylamine
- IT **Electroluminescent** devices  
(organic **electroluminescent** device)
- IT 105389-36-4 181367-06-6 181367-28-2 199868-25-2 213675-16-2  
221453-31-2 221453-32-3 221453-33-4 221453-34-5 221453-35-6  
221453-36-7 221453-37-8 221453-38-9 221453-39-0 221453-40-3  
221453-41-4 221453-42-5 221453-43-6 221453-44-7 221453-45-8  
221453-46-9 221453-47-0 221453-48-1 221453-49-2 221453-50-5  
221453-51-6 221453-52-7 221453-53-8 **221453-54-9**  
221453-55-0 221453-56-1
- RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device)

L104 ANSWER 43 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

1997:519436 Document No. 127:197527 **Light-emitting**  
material for organo-electroluminescence device and organo-  
electroluminescence device for which the **light-**  
**emitting** material is adapted. Tamano, Michiko; Enokida,  
Toshio (Toyo Ink Manufacturing Co., Ltd., Japan). Eur. Pat. Appl.  
EP 786926 A2 19970730, 31 pp. DESIGNATED STATES: R: DE, FR, GB.  
(English). CODEN: EPXXDW. APPLICATION: EP 1997-300551 19970129.  
PRIORITY: JP 1996-12488 19960129.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

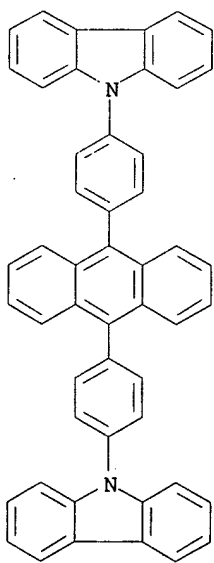
AB Compds. for use in **electroluminescent** devices are  
described by the general formulas I and II (A-D are the same or  
different groups each = (un)substituted alkyl, (un)substituted  
monocyclic group, or (un)substituted fused polycyclic group, or A  
and B and/or C and D, together with the nitrogen atom to which they  
are attached, form a substituted or unsubstituted heterocyclic ring;  
R1-20 are independently selected from H, halogen atoms,  
(un)substituted alkyl, (un)substituted alkoxy, (un)substituted  
amino, (un)substituted monocyclic, or (un)substituted fused  
polycyclic groups; and X1-4 are independently selected from various  
linking groups). Television sets, **light-emitting**  
devices, copy machines, printers, liquid-crystal displays, displays,  
electrophotog. photoreceptors, photoelec. converters, solar cells,  
and image sensors containing **electroluminescent** devices  
employing the compds. are also described.

IT 194296-19-0

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(**light-emitting** materials based on  
bis(aminophenyl)anthracene derivs. for organic  
**electroluminescent** devices and the  
**electroluminescent** devices and devices using them)

RN 194296-19-0 HCAPLUS

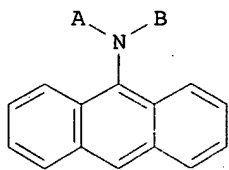
CN 9H-Carbazole, 9,9'-(9,10-anthracenediyl-di-4,1-phenylene)bis- (9CI)  
(CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; C07C211-55; C07C211-56  
 \*CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25, 52, 76  
 ST **electroluminescent** device aminophenylanthracene deriv  
 IT Photoelectric devices  
 (converters; **light-emitting** materials based  
 on bis(aminophenyl)anthracene derivs. for organic  
**electroluminescent** devices and the  
**electroluminescent** devices and devices using them)  
 IT Phosphors  
 (**electroluminescent**; **light-emitting**  
 materials based on bis(aminophenyl)anthracene derivs. for organic  
**electroluminescent** devices and the  
**electroluminescent** devices and devices using them)  
 IT **Electroluminescent** devices  
 Electrophotographic apparatus  
 Electrophotographic photoconductors (photoreceptors)  
 Liquid crystal displays  
 Liquid crystal displays  
 Optical imaging sensors  
 Solar cells  
 (**light-emitting** materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
**electroluminescent** devices and the  
**electroluminescent** devices and devices using them)  
 IT 194295-85-7 194295-89-1 194295-95-9 194296-08-7 194296-10-1  
 194296-12-3 194296-14-5 194296-17-8 **194296-19-0**  
 194296-21-4 194296-24-7 194296-26-9 194296-28-1 194296-30-5  
 194296-32-7 194296-34-9 194296-36-1 194296-38-3 194296-40-7  
 194296-44-1 194296-46-3 194296-48-5 194296-49-6 194296-50-9  
 194296-51-0 194296-52-1 194296-53-2 194296-54-3 194296-55-4  
 194296-56-5 194296-57-6 194296-58-7 194296-59-8 194296-60-1  
 194296-61-2  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (**light-emitting** materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
**electroluminescent** devices and the  
**electroluminescent** devices and devices using them)  
 IT 194295-92-6P 194295-98-2P 194296-03-2P 194296-06-5P  
 194296-42-9P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
 preparation); PREP (Preparation); USES (Uses)  
 (**light-emitting** materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
**electroluminescent** devices and the  
**electroluminescent** devices and devices using them)  
 IT 103-32-2, N-Phenylbenzylamine 591-50-4, Iodobenzene 620-93-9,  
 4,4'-Dimethyldiphenylamine 625-95-6, m-Iodotoluene 10081-67-1  
 24672-72-8 106704-35-2, 9,10-Bis(4-aminophenyl)anthracene  
 194296-62-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (**light-emitting** materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
**electroluminescent** devices and the  
**electroluminescent** devices and devices using them)  
 L104 ANSWER 44 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1997:476172 Document No. 127:101555 Organic **electroluminescent**  
 device elements. Tamano, Michiko; Okutsu, Satoshi; Enokida, Toshio  
 (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
 09157643 A2 19970617 Heisei, 11 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1995-321348 19951211.

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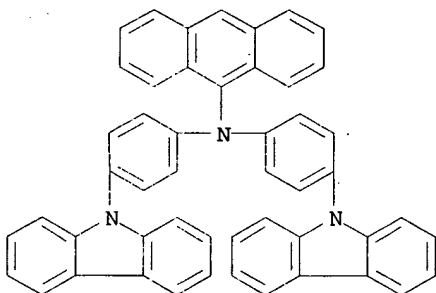
I

AB The elements comprise an anthracene derivative I [A, B = (substituted) aromatic ring] in the phosphor, the electron transport or the hole transport layer.

IT 191986-24-0  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent device elements)

RN 191986-24-0 HCAPLUS

CN 9-Anthracenamine, N,N-bis[4-(9H-carbazol-9-yl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
 ICS H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent device anthracene deriv phosphor

IT Electroluminescent devices  
 Phosphors  
 (organic electroluminescent device elements)

IT 62770-62-1 123847-85-8 148077-52-5 188049-36-7 191986-07-9  
 191986-08-0 191986-09-1 191986-10-4 191986-11-5 191986-12-6  
 191986-14-8 191986-16-0 191986-18-2 191986-20-6 191986-22-8  
 191986-24-0 191986-26-2 191986-27-3  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent device elements)

L104 ANSWER 45 OF 45 HCAPLUS COPYRIGHT 2005 ACS on STN

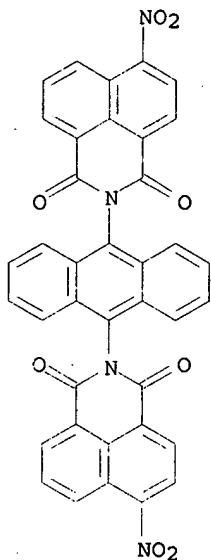
1991:593743 Document No. 115:193743 Organic electroluminescent devices. Egusa, Syun; Gemma, Nobuhiro (Toshiba Corp., Japan). Eur. Pat. Appl. EP 390551 A2 19901003, 49 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1990-303351 19900329. PRIORITY: JP 1989-83568 19890331; JP 1989-254960 19890929; JP 1990-25100 19900206; JP 1990-25101 19900206.

AB The title devices comprise 1st and 2nd electrodes sandwiching a multilayered body which comprises a plurality of organic films including a light-emitting layer, the material for each organic film and electrode is selected so that electrons and holes are simultaneously and resp. injected from the 1st and 2nd electrodes in the



multilayered body when a forward biasing voltage is applied, a large amount of injected electrons and holes are accumulated at the multilayered body, and these electrons and holes are subjected to radiative recombination at a predetd. threshold voltage.

IT 136694-88-7  
 RL: DEV (Device component use); USES (Uses)  
 (electroluminescent devices containing)  
 RN 136694-88-7 HCAPLUS  
 CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 2,2'-(9,10-anthracenediyl)bis[6-nitro- (9CI) (CA INDEX NAME)



IC ICM H05B033-12  
 ICS H05B033-14  
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 76  
 ST org electroluminescent device  
 IT **Electroluminescent devices**  
 (organic, multilayer)  
 IT 5101-26-8, 1,1'-Bipyrene 55034-79-2 56663-32-2, 1,1'-Bicoronene  
 65181-78-4 116071-73-9 136670-44-5 136670-45-6 136670-46-7  
 136670-47-8, 2,3'-Biovalene 136670-48-9 136670-49-0  
 136670-50-3 136670-51-4 136670-52-5 **136694-88-7**  
 RL: DEV (Device component use); USES (Uses)  
 (electroluminescent devices containing)  
 IT 7440-52-0, Erbium, uses and miscellaneous 7440-65-5, Yttrium, uses  
 and miscellaneous  
 RL: USES (Uses)  
 (organic electroluminescent devices with  
 electrodes from)

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(FILE 'HOME' ENTERED AT 13:42:44 ON 07 JUL 2005)

FILE 'HCAPLUS' ENTERED AT 13:43:11 ON 07 JUL 2005

E 20040161633/PN

E US20040161633/PN

L1 1 SEA ABB=ON PLU=ON US20040161633/PN  
D ALL  
SEL L1 RN

FILE 'REGISTRY' ENTERED AT 13:44:27 ON 07 JUL 2005

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147-14-8/BI OR 186412-15-7/BI OR 194295-98-2/BI OR  
194296-12-3/BI OR 194296-19-0/BI OR 2085-33-8/BI OR  
343978-79-0/BI OR 43069-36-9/BI OR 58328-31-7/BI OR  
614735-06-7/BI OR 722498-63-7/BI OR 741255-50-5/BI OR  
741255-51-6/BI OR 741255-52-7/BI OR 741255-53-8/BI OR  
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741255-69-6/BI OR 741255-70-9/BI OR 741255-71-0/BI OR  
741255-72-1/BI OR 741255-73-2/BI OR 741255-74-3/BI OR  
741255-75-4/BI OR 741255-76-5/BI OR 741255-77-6/BI OR  
741255-78-7/BI OR 741255-79-8/BI OR 741255-80-1/BI OR  
741255-82-3/BI OR 741255-84-5/BI OR 741255-86-7/BI OR  
741255-87-8/BI OR 741255-88-9/BI OR 741255-89-0/BI OR  
741255-90-3/BI OR 741255-91-4/BI OR 741255-92-5/BI OR  
741255-93-6/BI OR 741255-94-7/BI OR 741255-95-8/BI OR  
741255-96-9/BI OR 741255-97-0/BI OR 741255-98-1/BI OR  
741255-99-2/BI OR 741256-00-8/BI OR 741256-01-9/BI OR  
741256-02-0/BI OR 741256-03-1/BI OR 741256-04-2/BI OR  
741256-05-3/BI OR 741256-06-4/BI OR 741256-07-5/BI OR  
741256-08-6/BI OR 741256-09-7/BI OR 741256-10-0/BI OR  
99372-96-0/BI)

D L2 1-72 RN STR

E ANTHRACENE/CN

L3 1 SEA ABB=ON PLU=ON ANTHRACENE/CN  
D SCAN  
D RN  
E 120-12-7/RN

L4 1 SEA ABB=ON PLU=ON 120-12-7/RN  
D SCAN  
D L4 RSD

L5 110850 SEA ABB=ON PLU=ON 2508.17/RID

L6 34802 SEA ABB=ON PLU=ON 2508.17.56/RID

FILE 'LREGISTRY' ENTERED AT 13:57:28 ON 07 JUL 2005

L7 STR

FILE 'REGISTRY' ENTERED AT 14:01:23 ON 07 JUL 2005

L8 50 SEA SUB=L5 SSS SAM L7

L9 50 SEA SUB=L6 SSS SAM L7

D QUE STAT L8

D QUE STAT L9

FILE 'LREGISTRY' ENTERED AT 14:15:53 ON 07 JUL 2005

L10 STR L7

FILE 'REGISTRY' ENTERED AT 14:16:44 ON 07 JUL 2005

L11 50 SEA SSS SAM L10

L12 96106 SEA SSS FUL L10

SAV TEMP L12 THO875/A

L13 FILE 'LREGISTRY' ENTERED AT 14:20:35 ON 07 JUL 2005  
STR L10

L14 FILE 'REGISTRY' ENTERED AT 14:25:26 ON 07 JUL 2005  
50 SEA SUB=L12 SSS SAM L13  
D QUE STAT

L15 94819 SEA SUB=L12 SSS FUL L13

L16 FILE 'LREGISTRY' ENTERED AT 14:35:40 ON 07 JUL 2005  
STR L13

L17 FILE 'REGISTRY' ENTERED AT 14:37:30 ON 07 JUL 2005  
50 SEA SUB=L12 SSS SAM L16

L18 22229 SEA SUB=L12 SSS FUL L16  
SAV TEMP L15 THO875A/A  
SAV L18 THO875B/A

L19 FILE 'REGISTRY' ENTERED AT 14:42:13 ON 07 JUL 2005  
STR L16

L20 FILE 'REGISTRY' ENTERED AT 14:44:57 ON 07 JUL 2005  
D QUE STAT  
50 SEA SUB=L18 SSS SAM L19  
D QUE STAT

L21 FILE 'LREGISTRY' ENTERED AT 14:48:12 ON 07 JUL 2005  
STR L16  
D QUE STAT

L22 FILE 'REGISTRY' ENTERED AT 14:55:44 ON 07 JUL 2005  
50 SEA SUB=L18 SSS SAM L21  
D QUE STAT L20

L23 1123 SEA SUB=L18 SSS FUL L21  
SAV L23 THO875C/A  
D QUE STAT

L24 FILE 'LREGISTRY' ENTERED AT 15:02:22 ON 07 JUL 2005  
D QUE STAT L7  
D QUE STAT L10  
STR L10

L25 FILE 'REGISTRY' ENTERED AT 15:16:28 ON 07 JUL 2005  
19 SEA SUB=L18 SSS SAM L24

L26 FILE 'LREGISTRY' ENTERED AT 15:18:07 ON 07 JUL 2005  
STR L24

L27 FILE 'REGISTRY' ENTERED AT 15:20:53 ON 07 JUL 2005  
0 SEA SUB=L18 SSS SAM L26  
D QUE STAT  
D QUE STAT L24

L28 FILE 'LREGISTRY' ENTERED AT 15:22:10 ON 07 JUL 2005  
STR L24

L29 FILE 'REGISTRY' ENTERED AT 15:23:06 ON 07 JUL 2005  
0 SEA SUB=L18 SSS SAM L28  
D QUE STAT L25

L30 19 SEA SUB=L18 SSS SAM L24  
D SCAN

L31 260 SEA SUB=L18 SSS FUL L24  
SAV L31 THO875D/A  
D QUE STAT  
E ADAMANTANE/CN

L32 1 SEA ABB=ON PLU=ON ADAMANTANE/CN

D SCAN  
D RN  
E 281-23-2RN

L33 FILE 'LREGISTRY' ENTERED AT 15:40:58 ON 07 JUL 2005  
STR 281-23-2

L34 FILE 'REGISTRY' ENTERED AT 16:15:10 ON 07 JUL 2005  
3 SEA SUB=L12 SSS SAM L33  
D SCAN  
D QUE STAT  
D QUE STAT L18  
L35 78 SEA SUB=L12 SSS FUL L33  
D. SCAN  
SAV L35 THO875E/A

FILE 'HCAPLUS' ENTERED AT 16:23:19 ON 07 JUL 2005  
L36 26706 SEA ABB=ON PLU=ON L4  
L37 66157 SEA ABB=ON PLU=ON L12  
L38 14208 SEA ABB=ON PLU=ON L18  
L39 584 SEA ABB=ON PLU=ON L23  
L40 172 SEA ABB=ON PLU=ON L31  
L41 50 SEA ABB=ON PLU=ON L35  
L42 138115 SEA ABB=ON PLU=ON EL OR E(W)L OR L(W)E(W)D OR OLED OR  
ELECTROLUMIN? OR ORGANOLUMIN? OR (ELECTRO OR ORGANO OR  
ORG#) (2A)LUMIN? OR LIGHT? (2A) (EMIT? OR EMISSION? OR  
SOURCE?)  
L43 678180 SEA ABB=ON PLU=ON (LUMINES##### OR FLUORES? OR  
PHOSPHORES?)/BI,AB OR LED/IT OR PHOSPHOR# OR LUMIN?  
L44 763051 SEA ABB=ON PLU=ON L42 OR L43  
L45 18 SEA ABB=ON PLU=ON L44 AND L41  
D L45 1-5 HITSTR  
L46 44 SEA ABB=ON PLU=ON L44 AND L40  
L47 190 SEA ABB=ON PLU=ON L44 AND L39  
L48 4118 SEA ABB=ON PLU=ON L44 AND L38  
L49 7280 SEA ABB=ON PLU=ON L44 AND L37  
L50 5009 SEA ABB=ON PLU=ON L44 AND L36  
D QUE STAT L45  
D QUE L42  
L51 3344808 SEA ABB=ON PLU=ON DEVICE? OR CONTRIVANCE? OR INVENTION?  
OR APPARAT? OR APP## OR IMPLEMENT? OR INSTRUMENT? OR  
EQUIP?  
L52 13 SEA ABB=ON PLU=ON L51 AND L45  
L53 21 SEA ABB=ON PLU=ON L51 AND L46  
L54 89 SEA ABB=ON PLU=ON L51 AND L47  
L55 817 SEA ABB=ON PLU=ON L51 AND L48  
L56 1429 SEA ABB=ON PLU=ON L51 AND L49  
L57 838 SEA ABB=ON PLU=ON L51 AND L50  
L58 923917 SEA ABB=ON PLU=ON ELECTROD? OR CATHOD? OR ANOD?  
L59 2 SEA ABB=ON PLU=ON L58 AND L52  
D SCAN  
D L59 1-2 HITSTR  
L60 4 SEA ABB=ON PLU=ON L58 AND L53  
L61 23 SEA ABB=ON PLU=ON L58 AND L54  
L62 169 SEA ABB=ON PLU=ON L58 AND L55  
L63 290 SEA ABB=ON PLU=ON L58 AND L56  
L64 135 SEA ABB=ON PLU=ON L58 AND L57  
L65 851578 SEA ABB=ON PLU=ON (ELECTRON# OR E OR HOLE# OR CHARGE#) (  
2A) (TRANSFER? OR TRANSPORT? OR INJECT? OR BLOCK? OR  
MIGRAT? OR MOVE#) OR ET  
L66 1 SEA ABB=ON PLU=ON L65 AND L59  
L67 1 SEA ABB=ON PLU=ON L65 AND L60  
L68 12 SEA ABB=ON PLU=ON L65 AND L61  
L69 78 SEA ABB=ON PLU=ON L65 AND L62  
L70 118 SEA ABB=ON PLU=ON L65 AND L63  
L71 42 SEA ABB=ON PLU=ON L65 AND L64

D SCAN L66  
D QUE STAT L45

FILE 'REGISTRY' ENTERED AT 16:49:30 ON 07 JUL 2005

FILE 'LREGISTRY' ENTERED AT 16:49:37 ON 07 JUL 2005  
STR L33

FILE 'REGISTRY' ENTERED AT 16:50:34 ON 07 JUL 2005

3 SEA SUB=L12 SSS SAM L72  
D SCAN

78 SEA SUB=L12 SSS FUL L72

FILE 'HCAPLUS' ENTERED AT 16:52:17 ON 07 JUL 2005

FILE 'REGISTRY' ENTERED AT 17:00:22 ON 07 JUL 2005

FILE 'LREGISTRY' ENTERED AT 17:00:51 ON 07 JUL 2005  
STR L7

FILE 'REGISTRY' ENTERED AT 17:03:30 ON 07 JUL 2005

50 SEA SUB=L12 SSS SAM L75

22949 SEA SUB=L12 SSS FUL L75

SAV L77 THO875F/A  
D QUE STAT L13

50 SEA SUB=L77 SSS SAM L13

21928 SEA SUB=L77 SSS FUL L13

SAV L79 THO875G/A

50 SEA SUB=L77 SSS SAM L16

17876 SEA SUB=L77 SSS FUL L16

SAV L81 THO875H/A

44 SEA SUB=L77 SSS SAM L21

835 SEA SUB=L77 SSS FUL L21

SAV L83 THO875I/A

0 SEA SUB=L77 SSS SAM L24

8 SEA SUB=L77 SSS FUL L24

D SCAN

0 SEA SUB=L77 SSS SAM L33

4 SEA SUB=L77 SSS FUL L33

D SCAN

SAV L87 THO875J/A

FILE 'HCAPLUS' ENTERED AT 17:15:25 ON 07 JUL 2005

D QUE STAT L87

17111 SEA ABB=ON PLU=ON L77

16836 SEA ABB=ON PLU=ON L79

12767 SEA ABB=ON PLU=ON L81

441 SEA ABB=ON PLU=ON L83

7 SEA ABB=ON PLU=ON L85

4 SEA ABB=ON PLU=ON L87

D SCAN

7 SEA ABB=ON PLU=ON L92 OR L93

7 SEA ABB=ON PLU=ON L94 AND L42

91 SEA ABB=ON PLU=ON L42 AND L91

566 SEA ABB=ON PLU=ON L42 AND L90

711 SEA ABB=ON PLU=ON L42 AND (L89 OR L88)

D QUE L51

87 SEA ABB=ON PLU=ON L51 AND L96

541 SEA ABB=ON PLU=ON L51 AND (L97 OR L98)

28 SEA ABB=ON PLU=ON L58 AND L99

199 SEA ABB=ON PLU=ON L58 AND L100

14 SEA ABB=ON PLU=ON L65 AND L101

14 SEA ABB=ON PLU=ON L103 AND L102

D QUE STAT

14 SEA ABB=ON PLU=ON L103 OR L104

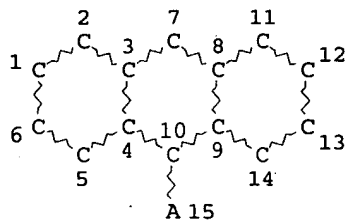
14 SEA ABB=ON PLU=ON L105 NOT L95

D L71 1-5 HITSTR

L107 13 SEA ABB=ON PLU=ON L105 NOT L71  
 L108 41 SEA ABB=ON PLU=ON L71 NOT L105

=&gt; d que stat 195

L10 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

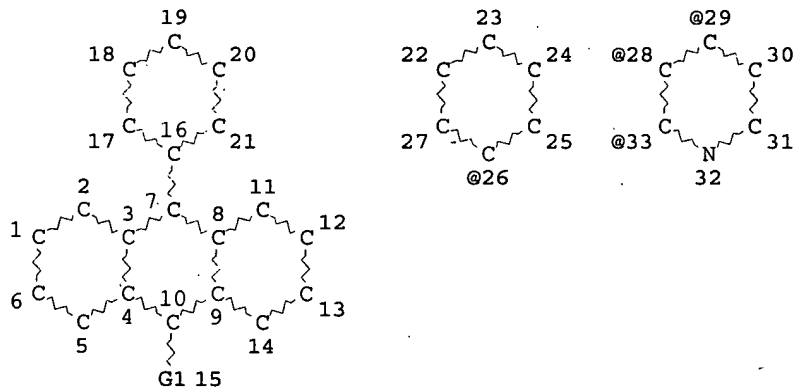
RSPEC I

NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L12 96106 SEA FILE=REGISTRY SSS FUL L10

L24 STR



VAR G1=26/33/28/29

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

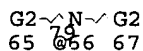
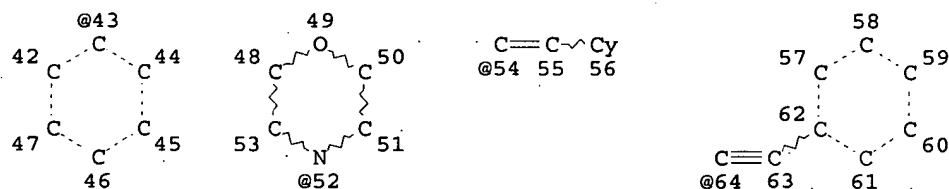
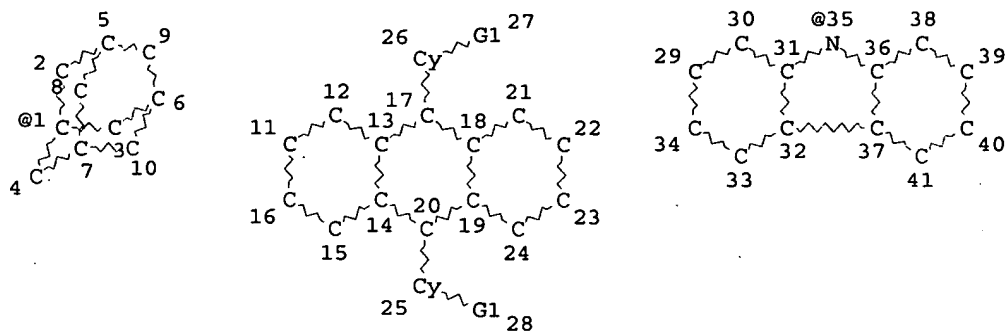
GRAPH ATTRIBUTES:

RSPEC I

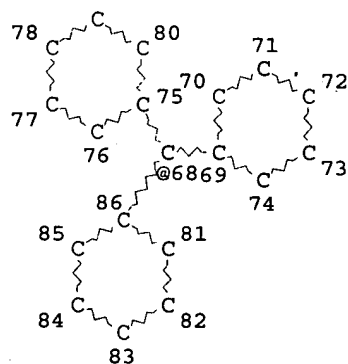
NUMBER OF NODES IS 33

STEREO ATTRIBUTES: NONE

L33 STR



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VAR G1=X/CN/AK/O/1/35/43/52/54/64/66/68

VAR G2=AK/CB

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 25

GGCAT IS UNS AT 26

GGCAT IS UNS AT 56

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS M5-X6 C M0-X1 N AT 25

ECOUNT IS M5-X6 C M0-X1 N AT 26

ECOUNT IS M5-X6 C M0-X1 N AT 56

GRAPH ATTRIBUTES:

RSPEC 11 29

NUMBER OF NODES IS 86

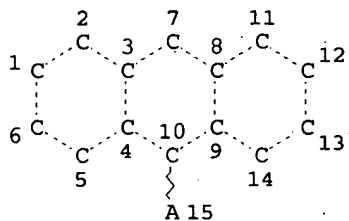
STEREO ATTRIBUTES: NONE

L42 138115 SEA FILE=HCAPLUS ABB=ON PLU=ON EL OR E(W)L OR L(W)E(W)D

OR OLED OR ELECTROLUMIN? OR ORGANOLUMIN? OR (ELECTRO OR  
ORGANO OR ORG#) (2A) LUMIN? OR LIGHT? (2A) (EMIT? OR  
EMISSION? OR SOURCE?)

L75

STR



## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 15

## STEREO ATTRIBUTES: NONE

L77 22949 SEA FILE=REGISTRY SUB=L12 SSS FUL L75  
L85 8 SEA FILE=REGISTRY SUB=L77 SSS FUL L24  
L87 4 SEA FILE=REGISTRY SUB=L77 SSS FUL L33  
L92 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L85  
L93 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L87  
L94 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L92 OR L93  
L95 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L94 AND L42

=&gt; d l95 1-7 cbib hitstr hitind

L95 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

2005:923 Document No. 142:82030 Organic **electroluminescent**  
device with anthracene derivative. Saitoh, Akihito; Suzuki, Koichi;  
Senoo, Akihiro; Ueno, Kazunori; Okinaka, Keiji (Canon Kabushiki  
Kaisha, Japan). U.S. Pat. Appl. Publ. US 2004263067 A1 20041230, 34  
pp. (English). CODEN: USXXCO. APPLICATION: US 2004-875241  
20040625. PRIORITY: JP 2003-184261 20030627.

IT 813467-79-7P

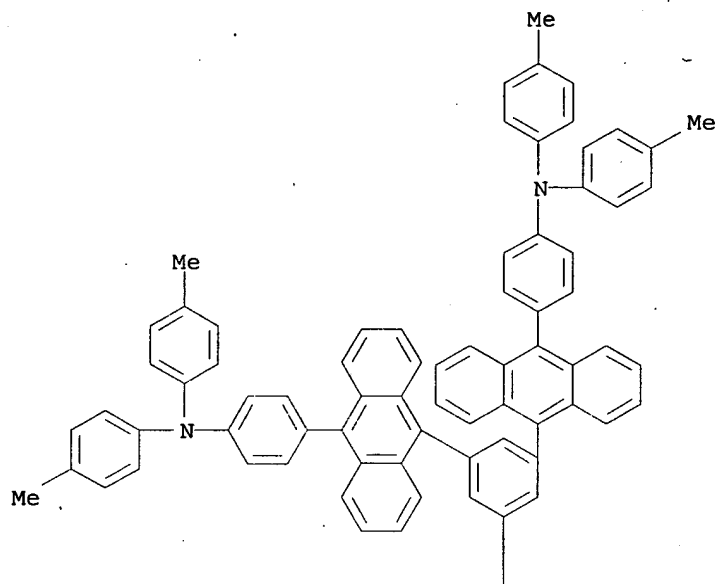
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(organic **electroluminescent** device with anthracene derivative)

RN 813467-79-7 HCAPLUS

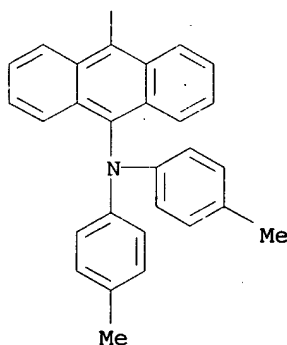
CN 9-Anthracenamine, 10-[3,5-bis[10-[4-[bis(4-  
methylphenyl)amino]phenyl]-9-anthracenyl]phenyl]-N,N-bis(4-  
methylphenyl)- (9CI) (CA INDEX NAME)



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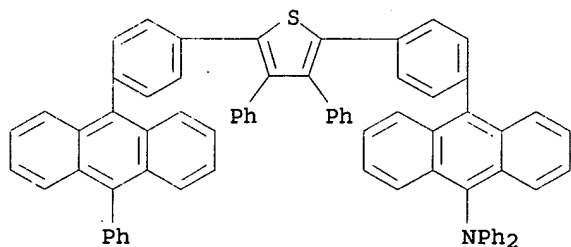


PAGE 2-A



IC ICM H01J001-62  
 ICS H01J063-04; C07D409-14; C07D401-14  
 INCL 313504000; 546285000; 546255000; 548528000; 549059000; 564426000  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST **electroluminescent device anthracene band gap**  
 IT Band gap  
     **Electroluminescent devices**  
     (organic **electroluminescent** device with anthracene derivative)  
 IT 813437-46-6 813437-47-7D, derivs. 813437-48-8 813467-72-0  
 813467-72-0D, derivs. 813467-73-1 813467-74-2 813467-76-4  
 813467-77-5 813467-81-1  
 RL: DEV (Device component use); USES (Uses)  
     (organic **electroluminescent** device with anthracene derivative)  
 IT 813437-47-7P 813467-75-3P 813467-78-6P **813467-79-7P**  
 813467-80-0P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
     (organic **electroluminescent** device with anthracene derivative)

- IT 122-39-4, Diphenyl amine, reactions 626-39-1, 1,3,5-Tribromobenzene 32316-92-0, Naphthalene 2-boronic acid 100622-34-2, 9-Anthryl boronic acid 361486-60-4 654067-65-9 813461-32-4 813461-33-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(organic **electroluminescent** device with anthracene derivative)
- IT 713542-04-2P 813461-31-3P 813461-34-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(organic **electroluminescent** device with anthracene derivative)
- L95 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN  
2003:773841 Document No. 139:298983 Organic **electroluminescent** device and novel thiophene derivative. Ishida, Tsutomu; Shimamura, Takehiko; Tanabe, Yoshimitsu; Totani, Yoshiyuki; Nakatsuka, Masakatsu (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003282268 A2 20031003, 48 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-112966 20020416. PRIORITY: JP 2002-9104 20020117.
- IT **608142-52-5P**  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic **electroluminescent** device and novel thiophene derivative)
- RN **608142-52-5** HCAPLUS  
CN 9-Anthracenamine, 10-[4-[3,4-diphenyl-5-[4-(10-phenyl-9-anthracenyl)phenyl]-2-thienyl]phenyl]-N,N-diphenyl- (9CI) (CA INDEX NAME)



- IC ICM H05B033-14  
ICS C07D333-08; C07D333-20; C09K011-06; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST **electroluminescent** device thiophene
- IT **Electroluminescent** devices  
(organic **electroluminescent** device and novel thiophene derivative)
- IT 110-02-1D, Thiophene, derivs. 608142-39-8 608142-48-9 608142-57-0  
RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent** device and novel thiophene derivative)
- IT 608142-35-4P 608142-36-5P 608142-37-6P 608142-38-7P  
608142-40-1P 608142-41-2P 608142-42-3P 608142-43-4P  
608142-44-5P 608142-45-6P 608142-46-7P 608142-47-8P  
608142-49-0P 608142-50-3P 608142-51-4P **608142-52-5P**  
608142-53-6P 608142-54-7P 608142-55-8P 608142-56-9P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic **electroluminescent** device and novel thiophene derivative)
- IT 98-80-6, Phenyl boronic acid 96216-36-3 100622-34-2  
201802-67-7 334658-75-2 400607-48-9 597553-98-5 597553-99-6

608142-58-1 608142-59-2 608142-60-5 608142-61-6 608142-62-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(organic electroluminescent device and novel thiophene derivative)

L95 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

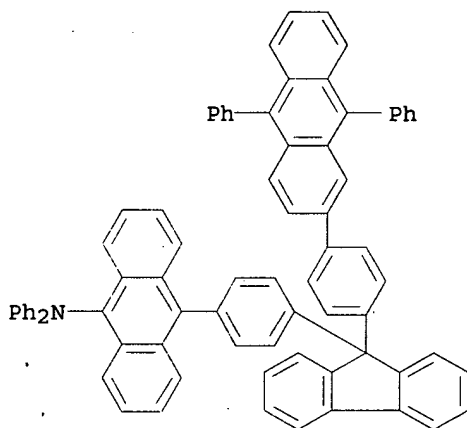
2003:723685 Document No. 139:252299 Diphenylfluorene derivatives and organic electroluminescence devices using them with high luminescence efficiency. Ishida, Tsutomu; Shimamura, Takehiko; Tanabe, Yoshimitsu; Totani, Yoshiyuki; Nakatsuka, Masakatsu (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003261472 A2 20030916, 40 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-62101 20020307.

IT 597554-22-8P 597554-23-9P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(anthrylphenylphenylfluorene derivs. for organic EL devices with high luminescence efficiency)

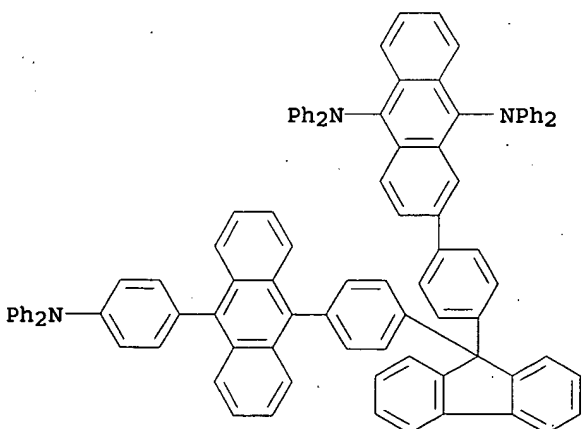
RN 597554-22-8 HCAPLUS

CN 9-Anthracenamine, 10-[4-[9-[4-(9,10-diphenyl-2-anthracenyl)phenyl]-9H-fluoren-9-yl]phenyl]-N,N-diphenyl- (9CI) (CA INDEX NAME)



RN 597554-23-9 HCAPLUS

CN 9,10-Anthracenediamine, 2-[4-[9-[4-[10-[4-(diphenylamino)phenyl]-9-anthracenyl]phenyl]-9H-fluoren-9-yl]phenyl]-N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)

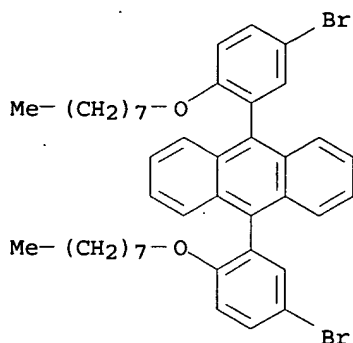


IC ICM C07C013-573  
 ICS C07C211-54; C07C211-61; C09K011-06; H05B033-14; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST fluorene phenyl anthryl org electroluminescence device  
 IT **Electroluminescent devices**  
 (anthrylphenylphenylfluorene derivs. for organic EL devices with high luminescence efficiency)  
 IT 460347-61-9P 597554-04-6P 597554-05-7P 597554-06-8P  
 597554-07-9P 597554-08-0P 597554-09-1P 597554-10-4P  
 597554-11-5P 597554-12-6P 597554-13-7P 597554-14-8P  
 597554-15-9P 597554-16-0P 597554-17-1P 597554-18-2P  
 597554-19-3P 597554-20-6P 597554-21-7P 597554-22-8P  
 597554-23-9P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (anthrylphenylphenylfluorene derivs. for organic EL devices with high luminescence efficiency)  
 IT 98-80-6, Phenylboric acid 100622-34-2 201802-67-7 334658-75-2  
 400607-48-9 474115-76-9 597553-97-4 597553-98-5 597553-99-6  
 597554-00-2 597554-01-3 597554-02-4 597554-03-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (anthrylphenylphenylfluorene derivs. for organic EL devices with high luminescence efficiency)  
 IT 2085-33-8, Tris(8-quinolinolato)aluminum 24601-13-6,  
 Bis(2-methyl-8-quinolinolato)aluminum-μ-oxo-bis(2-methyl-8-quinolinolato)aluminum 65181-78-4 123847-85-8,  
 4,4'-Bis[N-phenyl-N-(1''-naphthyl)amino]biphenyl 124729-98-2,  
 4,4',4'''-Tris [N-(3'''-methylphenyl)-N-phenylamino]triphenylamine  
 146162-54-1, Bis(2-methyl-8-quinolinolato)(4-phenylphenolato)aluminum.  
 RL: DEV (Device component use); USES (Uses)  
 (luminescent layer containing; anthrylphenylphenylfluorene derivs. for organic EL devices with high luminescence efficiency)

L95 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2003:396315 Document No. 138:409104 Blue **electroluminescent**  
 polymer and organic **electroluminescence** device using the  
 same. Son, Jhun Mo; Lee, Ji Hoon; Kang, In Nam (Samsung Electronics Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2003096137 A1  
 20030522, 16 pp. (English). CODEN: USXXCO. APPLICATION: US  
 2002-274048 20021021. PRIORITY: KR 2001-71245 20011116.  
 IT **528893-66-5P**  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (blue **electroluminescent** polymers with diphenylanthracene units and organic **electroluminescent** devices using them)  
 RN 528893-66-5 HCAPLUS  
 CN Anthracene, 9,10-bis[5-bromo-2-(octyloxy)phenyl]-, polymer with 9,10-dibromoanthracene (9CI) (CA INDEX NAME)

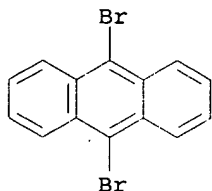
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CRN 528893-64-3  
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CM 2

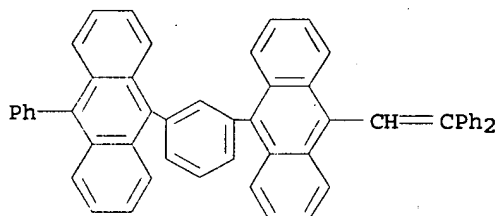
CRN 523-27-3  
CMF C14 H8 Br2



IC ICM H05B033-14  
ICS C09K011-06  
INCL 428690000; 252301160; 428917000; 252301350; 313504000; 313506000  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 38, 76  
ST phenylanthracene deriv polymer **electroluminescent** material; **electroluminescent** device phenylanthracene deriv **electroluminescent** polymer  
IT **Electroluminescent** devices  
(blue **electroluminescent** polymers with diphenylanthracene units and organic **electroluminescent** devices using them)  
IT Luminescent substances  
(**electroluminescent**; blue **electroluminescent** polymers with diphenylanthracene units and organic **electroluminescent** devices using them)  
IT 528893-65-4P 528893-66-5P 528893-68-7P 528893-70-1P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(blue **electroluminescent** polymers with diphenylanthracene units and organic **electroluminescent** devices using them)  
IT 95-56-7, 2-Bromophenol 111-83-1, 1-Bromooctane 523-27-3, 9,10-Dibromoanthracene 61676-62-8, 2-Isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(blue **electroluminescent** polymers with diphenylanthracene units and organic **electroluminescent** devices using them)  
IT 528598-05-2P 528598-06-3P 528893-63-2P 528893-64-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(blue **electroluminescent** polymers with  
diphenylanthracene units and organic **electroluminescent**  
devices using them)

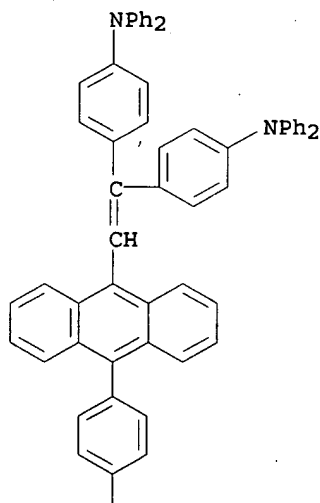
L95 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN  
2000:694280 Document No. 133:259476 Amino or styryl compound, organic  
thin film, and **electroluminescent** device. Hosokawa,  
Chishio; Funahashi, Masakazu; Azuma, Hisahiro; Ikeda, Shuji; Arai,  
Hiromasa (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho  
JP 2000273056 A2 20001003, 30 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1999-352216 19991210. PRIORITY: JP 1999-10660  
19990119.  
IT 294881-36-0  
RL: PRP (Properties); TEM (Technical or engineered material use);  
USES (Uses)  
(amino or styryl compound for heat-resistant organic thin film or  
**electroluminescent** device)  
RN 294881-36-0 HCAPLUS  
CN Anthracene, 9-[3-[10-(2,2-diphenylethenyl)-9-anthracenyl]phenyl]-10-  
phenyl- (9CI) (CA INDEX NAME)



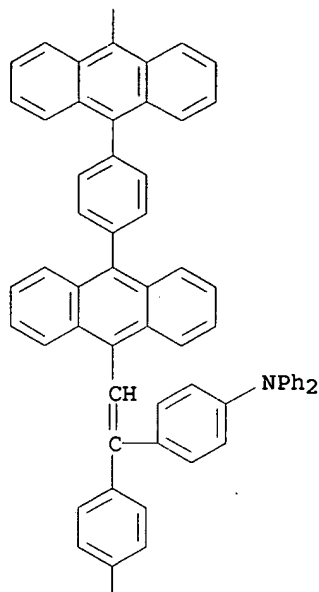
IC ICM C07C015-60  
ICS C07C211-54; C07C211-57; C07D209-86; C07D223-24; C09K011-06;  
H05B033-14; H05B033-22  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 25, 73  
ST **electroluminescent** device polycyclic amino styryl compd;  
heat resistant thin film **electroluminescent** compd  
IT **Electroluminescent** devices  
(amino or styryl compound for heat-resistant organic thin film or  
**electroluminescent** device)  
IT Phosphors  
(**electroluminescent**; amino or styryl compound for  
heat-resistant organic thin film or **electroluminescent**  
device)  
IT 294881-17-7P 294881-18-8P 294881-21-3P 294881-24-6P  
RL: PNU (Preparation, unclassified); PRP (Properties); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)  
(amino or styryl compound for heat-resistant organic thin film or  
**electroluminescent** device)  
IT 294881-22-4P 294881-23-5P 294881-26-8P 294881-27-9P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(amino or styryl compound for heat-resistant organic thin film or  
**electroluminescent** device)  
IT 279672-13-8 294881-28-0 294881-29-1 294881-30-4 294881-31-5  
294881-32-6 294881-33-7 294881-34-8 294881-35-9  
294881-36-0 294881-37-1 294881-38-2 294881-39-3  
294881-40-6 294881-41-7 294881-42-8 294881-43-9  
294881-44-0D, fluorene derivs. 294881-45-1  
RL: PRP (Properties); TEM (Technical or engineered material use);  
USES (Uses)

- (amino or styryl compound for heat-resistant organic thin film or electroluminescent device)
- IT 5101-27-9P, 1-Phenylpyrene 23674-20-6P, 9-Bromo-10-phenylanthracene 36809-26-4P, 4-Bromotriphenylamine 202831-65-0P 294881-19-9P 294881-20-2P 294881-47-3P  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (in preparation of amino or styryl compound for heat-resistant organic thin film or electroluminescent device)
- IT 92-86-4, 4,4'-Dibromobiphenyl 106-37-6, 1,4-Dibromobenzene 108-86-1, Bromobenzene, reactions 122-39-4, Diphenylamine, reactions 523-27-3, 9,10-Dibromoanthracene 602-55-1, 9-Phenylanthracene 626-39-1, 1,3,5-Tribromobenzene 776-74-9,  $\alpha$ -Bromodiphenylmethane 1714-29-0, 1-Bromopyrene 103068-20-8 173678-07-4, 3,5-Di(1-naphthyl)bromobenzene 201734-64-7 294881-25-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in preparation of amino or styryl compound for heat-resistant organic thin film or electroluminescent device)
- L95 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2000:25608 Document No. 132:85990 Distyrylarylene derivative for organic electroluminescence device. Azuma, Hisahiro; Hosokawa, Chishio; Kusumoto, Tadashi (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000007604 A2 20000111, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-171283 19980618.
- IT 253870-09-6  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Distyrylarylene derivative for organic electroluminescence device)
- RN 253870-09-6 HCAPLUS  
 CN Benzenamine, 4,4',4'',4'''-[9,10-anthracenediylbis(4,1-phenylene-10,9-anthracenediyl-2-ethenyl-1-ylidene)]tetrakis[N,N-diphenyl-9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



PAGE 3-A

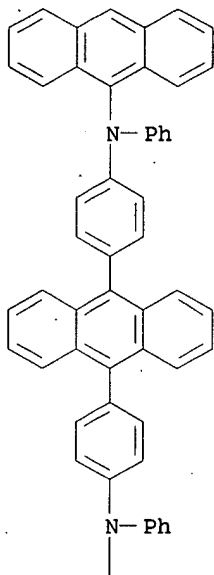


- IC ICM C07C043-20  
ICS C07C043-257; C07C211-54; C09K011-06; H05B033-14; H05B033-22  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 25  
ST distyrylarylene org **electroluminescence** device  
IT **Electroluminescent** devices  
(Distyrylarylene derivative for organic **electroluminescence**  
device)  
IT Alkynes  
Alkynes  
Aromatic hydrocarbons, uses  
Aromatic hydrocarbons, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(arynes; Distyrylarylene derivative for organic  
**electroluminescence** device)  
IT 253870-06-3 253870-07-4 253870-08-5 **253870-09-6**  
253870-10-9 253870-11-0 253870-12-1 253870-13-2 253870-14-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(Distyrylarylene derivative for organic **electroluminescence**  
device)  
L95 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN  
1997:519436 Document No. 127:197527 **Light-emitting**  
material for organo-**electroluminescence** device and organo-  
**electroluminescence** device for which the **light-**  
**emitting** material is adapted. Tamano, Michiko; Enokida,  
Toshio (Toyo Ink Manufacturing Co., Ltd., Japan). Eur. Pat. Appl.  
EP 786926 A2 19970730, 31 pp. DESIGNATED STATES: R: DE, FR, GB.  
(English). CODEN: EPXXDW. APPLICATION: EP 1997-300551 19970129.  
PRIORITY: JP 1996-12488 19960129.

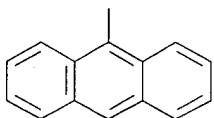


IT 194296-17-8  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (light-emitting materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
 electroluminescent devices and the  
 electroluminescent devices and devices using them)  
 RN 194296-17-8 HCAPLUS  
 CN 9-Anthracenamine, N,N'-(9,10-anthracenediyl-di-4,1-phenylene)bis[N-  
 phenyl- (9CI)' (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM H05B033-14  
 ICS C09K011-06; C07C211-55; C07C211-56  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 25, 52, 76  
 ST electroluminescent device aminophenylanthracene deriv  
 IT Photoelectric devices  
 (converters; light-emitting materials based  
 on bis(aminophenyl)anthracene derivs. for organic  
 electroluminescent devices and the  
 electroluminescent devices and devices using them)  
 IT Phosphors  
 (electroluminescent; light-emitting  
 materials based on bis(aminophenyl)anthracene derivs. for organic  
 electroluminescent devices and the  
 electroluminescent devices and devices using them)  
 IT Electroluminescent devices  
 Electrophotographic apparatus

Electrophotographic photoconductors (photoreceptors)  
 Liquid crystal displays  
 Liquid crystal displays  
 Optical imaging sensors  
 Solar cells

(light-emitting materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
 electroluminescent devices and the  
 electroluminescent devices and devices using them)

IT 194295-85-7 194295-89-1 194295-95-9 194296-08-7 194296-10-1  
 194296-12-3 194296-14-5 194296-17-8 194296-19-0  
 194296-21-4 194296-24-7 194296-26-9 194296-28-1 194296-30-5  
 194296-32-7 194296-34-9 194296-36-1 194296-38-3 194296-40-7  
 194296-44-1 194296-46-3 194296-48-5 194296-49-6 194296-50-9  
 194296-51-0 194296-52-1 194296-53-2 194296-54-3 194296-55-4  
 194296-56-5 194296-57-6 194296-58-7 194296-59-8 194296-60-1  
 194296-61-2

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(light-emitting materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
 electroluminescent devices and the  
 electroluminescent devices and devices using them)

IT 194295-92-6P 194295-98-2P 194296-03-2P 194296-06-5P  
 194296-42-9P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
 preparation); PREP (Preparation); USES (Uses)

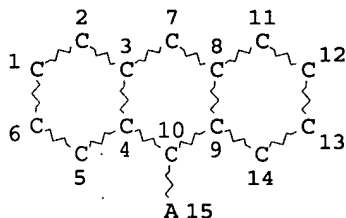
(light-emitting materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
 electroluminescent devices and the  
 electroluminescent devices and devices using them)

IT 103-32-2, N-Phenylbenzylamine 591-50-4, Iodobenzene 620-93-9,  
 4,4'-Dimethyldiphenylamine 625-95-6, m-Iodotoluene 10081-67-1  
 24672-72-8 106704-35-2, 9,10-Bis(4-aminophenyl)anthracene  
 194296-62-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(light-emitting materials based on  
 bis(aminophenyl)anthracene derivs. for organic  
 electroluminescent devices and the  
 electroluminescent devices and devices using them)

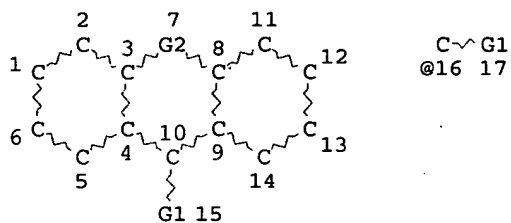
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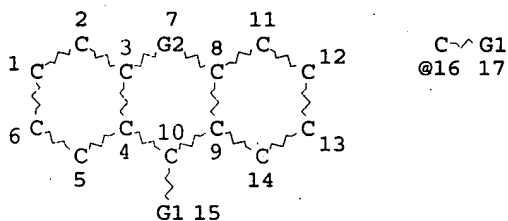
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DEFAULT ECLEVEL IS LIMITED

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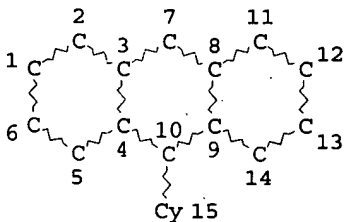
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RSPEC I  
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE  
L21 STR



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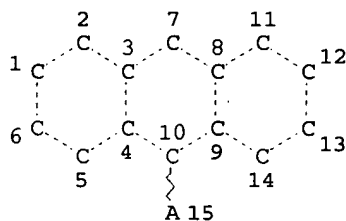
L42 138115 SEA FILE=HCAPLUS ABB=ON PLU=ON EL OR E(W)L OR L(W)E(W)D  
OR OLED OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR  
ORGANO OR ORG#) (2A)LUM!N? OR LIGHT? (2A) (EMIT? OR  
EMISSION? OR SOURCE?)

L51 3344808 SEA FILE=HCAPLUS ABB=ON PLU=ON DEVICE? OR CONTRIVANCE?  
OR INVENTION? OR APPARAT? OR APP## OR IMPLEMENT? OR  
INSTRUMENT? OR EQUIP?

L58 923917 SEA FILE=HCAPLUS ABB=ON PLU=ON ELECTROD? OR CATHOD? OR  
ANOD?

L65 851578 SEA FILE=HCAPLUS ABB=ON PLU=ON (ELECTRON# OR E OR  
HOLE# OR CHARGE#) (2A) (TRANSFER? OR TRANSPORT? OR INJECT?  
OR BLOCK? OR MIGRAT? OR MOVE#) OR ET

L75 STR



NODE ATTRIBUTES:

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GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L77 22949 SEA FILE=REGISTRY SUB=L12 SSS FUL L75

L79 21928 SEA FILE=REGISTRY SUB=L77 SSS FUL L13

L81 17876 SEA FILE=REGISTRY SUB=L77 SSS FUL L16

L83 835 SEA FILE=REGISTRY SUB=L77 SSS FUL L21

L88 17111 SEA FILE=HCAPLUS ABB=ON PLU=ON L77

L89 16836 SEA FILE=HCAPLUS ABB=ON PLU=ON L79

L90 12767 SEA FILE=HCAPLUS ABB=ON PLU=ON L81

L91 441 SEA FILE=HCAPLUS ABB=ON PLU=ON L83

L96 91 SEA FILE=HCAPLUS ABB=ON PLU=ON L42 AND L91

L97 566 SEA FILE=HCAPLUS ABB=ON PLU=ON L42 AND L90

L98 711 SEA FILE=HCAPLUS ABB=ON PLU=ON L42 AND (L89 OR L88)

L99 87 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 AND L96

L100 541 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 AND (L97 OR L98)

L101 28 SEA FILE=HCAPLUS ABB=ON PLU=ON L58 AND L99

L102 199 SEA FILE=HCAPLUS ABB=ON PLU=ON L58 AND L100

L103 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L65 AND L101

L104 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L103 AND L102

L105 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L103 OR L104

=> d l105 1-14 cbib hitstr hitind

L105 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN

2005:405145 Document No. 142:454015 Luminescent material containing  
anthracene compound and luminescent element using it. Murase,  
Seiichiro; Nagao, Kazuma; Tominaga, Takeshi (Toray Industries, Inc.,  
Japan). Jpn. Kokai Tokkyo Koho JP 2005120296 A2 20050512, 26 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-358843 20031020.

IT 97083-12-0P 851086-22-1P 851086-23-2P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM

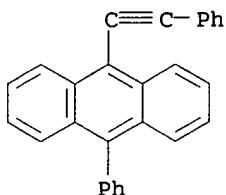
(Technical or engineered material use); PREP (Preparation); USES

(Uses)

(luminescent material containing blue-emitting anthracene compound for luminescent element with high luminescent efficiency and durability)

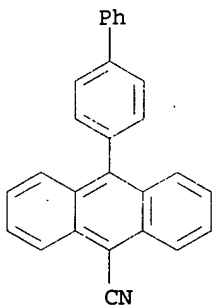
RN 97083-12-0 HCAPLUS

CN Anthracene, 9-phenyl-10-(phenylethynyl)- (6CI, 7CI, 9CI) (CA INDEX NAME)



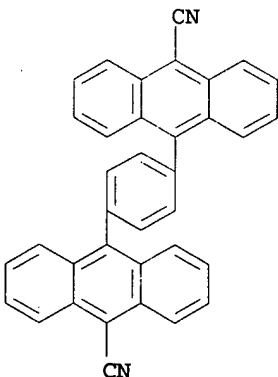
RN 851086-22-1 HCAPLUS

CN 9-Anthracenecarbonitrile, 10-[1,1'-biphenyl]-4-yl- (9CI) (CA INDEX NAME)



RN 851086-23-2 HCAPLUS

CN 9-Anthracenecarbonitrile, 10,10'-(1,4-phenylene)bis- (9CI) (CA INDEX NAME)



IT 23674-20-6, 9-Bromo-10-phenylanthracene 80393-52-8

, 9-Bromo-10-cyanoanthracene

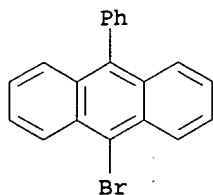
RL: RCT (Reactant); RACT (Reactant or reagent)

(luminescent material containing blue-emitting anthracene compound for luminescent element with high luminescent efficiency and

durability)

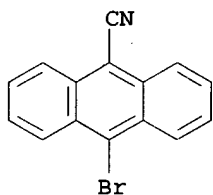
RN 23674-20-6 HCAPLUS

CN Anthracene, 9-bromo-10-phenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 80393-52-8 HCAPLUS

CN 9-Anthracenecarbonitrile, 10-bromo- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS H05B033-14; H05B033-22; C07C015-60; C07C255-52; C07D277-66

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74

IT Luminescent substances

Optical imaging devices

(luminescent material containing blue-emitting anthracene compound for luminescent element with high luminescent efficiency and durability)

IT 97083-12-0P 103035-10-5P 721969-98-8P

851086-22-1P 851086-23-2P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(luminescent material containing blue-emitting anthracene compound for luminescent element with high luminescent efficiency and durability)

IT 137-07-5, 2-Aminobenzene thiol 536-74-3, Phenylacetylene

4612-26-4, 1,4-Phenylenediboronic acid 5122-94-1,

4-Biphenylboronic acid 5470-11-1 23674-20-6,

9-Bromo-10-phenylanthracene 80393-52-8,

9-Bromo-10-cyanoanthracene 121759-52-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(luminescent material containing blue-emitting anthracene compound for luminescent element with high luminescent efficiency and durability)

L105 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN

2005:369061 Document No. 142:419750 OLED device

with asymmetric monoanthracene derivative host. Cosimbescu, Lelia;

Vreeland, William B.; Conley, Scott R.; Mount, Jeri L. (Eastman

Kodak Company, USA). U.S. Pat. Appl. Publ. US 2005089715 A1

20050428, 19 pp. (English). CODEN: USXXCO. APPLICATION: US

2003-692562 20031024.

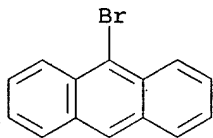
IT 1564-64-3, 9-Bromoanthracene

RL: RCT (Reactant); RACT (Reactant or reagent)

(OLED device employing light-emitting dopant in asym. monoanthracene derivative host prepared using).

RN 1564-64-3 HCAPLUS

CN Anthracene, 9-bromo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



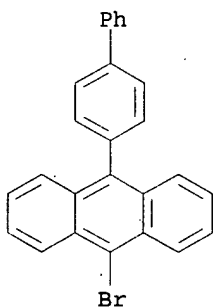
IT 400607-05-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(OLED device employing light-emitting dopant in asym. monoanthracene derivative host prepared using)

RN 400607-05-8 HCAPLUS

CN Anthracene, 9-[1,1'-biphenyl]-4-yl-10-bromo- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

INCL 428690000; 428917000; 313504000; 313506000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 74, 76

ST OLED electroluminescent device asym monoanthracene deriv host

IT Electroluminescent devices

Light sources

(OLED device employing light-emitting dopant in asym. monoanthracene derivative host)

IT Polymers, uses

RL: DEV (Device component use); USES (Uses)

(co-host; OLED device employing light

-emitting dopant in asym. monoanthracene derivative host)

IT Electroluminescent devices

(displays; OLED device employing light-emitting dopant in asym. monoanthracene derivative host)

IT Luminescent screens

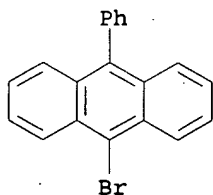
(electroluminescent; OLED device employing light-emitting dopant in asym. monoanthracene derivative host)

IT 128-08-5, N-Bromosuccinimide 1564-64-3, 9-Bromoanthracene

4688-76-0, 2-Biphenylboronic acid 5122-94-1, (1,1'-Biphenyl-4-yl)boronic acid

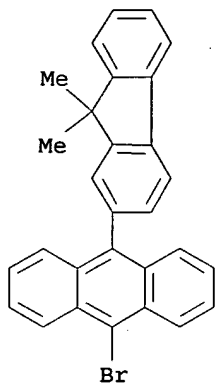
RL: RCT (Reactant); RACT (Reactant or reagent)

- (OLED device employing light-emitting dopant in asym. monoanthracene derivative host prepared using)
- IT 323195-31-9P 400607-05-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (OLED device employing light-emitting dopant in asym. monoanthracene derivative host prepared using)
- IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)  
 RL: DEV (Device component use); USES (Uses)  
 (co-host, electron-transporting layer; OLED device employing light-emitting dopant in asym. monoanthracene derivative host)
- IT 80663-92-9  
 RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
 (dopant; OLED device employing light-emitting dopant in asym. monoanthracene derivative host)
- IT 123847-85-8, NPB  
 RL: DEV (Device component use); USES (Uses)  
 (hole-transporting layer; OLED device employing light-emitting dopant in asym. monoanthracene derivative host)
- IT 850539-22-9P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (host; OLED device employing light-emitting dopant in asym. monoanthracene derivative host)
- L105 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2005:138288 Document No. 142:248667 High-luminance organic electroluminescent devices and asymmetrically substituted anthracenes therefor. Tsukada, Hidetaka; Tanabe, Yoshimitsu; Shimamura, Takehiko; Totani, Yoshiyuki (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2005041843 A2 20050217, 35 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-279740 20030725.
- IT 23674-20-6P 400607-12-7P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (in preparation of anthracene phosphors; asym. substituted anthracene phosphors for high-luminance organic electroluminescent devices)
- RN 23674-20-6 HCAPLUS  
 CN Anthracene, 9-bromo-10-phenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- RN 400607-12-7 HCAPLUS  
 CN Anthracene, 9-bromo-10-(9,9-dimethyl-9H-fluoren-2-yl)- (9CI) (CA INDEX NAME)



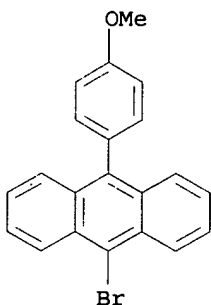


IT 158902-11-5 400607-00-3 817642-17-4  
 844678-98-4 844679-00-1 844679-02-3  
 844679-06-7 844679-08-9 844679-09-0

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in preparation of anthracene phosphors; asym. substituted anthracene  
 phosphors for high-luminance organic  
 electroluminescent devices)

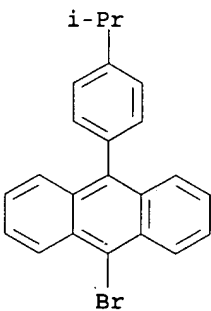
RN 158902-11-5 HCAPLUS

CN Anthracene, 9-bromo-10-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



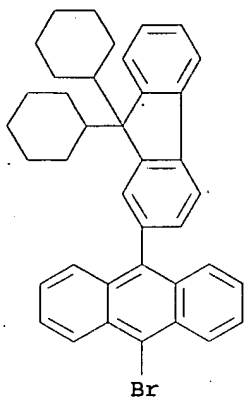
RN 400607-00-3 HCAPLUS

CN Anthracene, 9-bromo-10-[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)

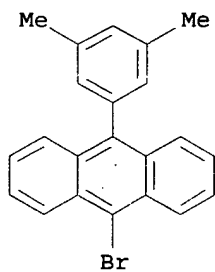


RN 817642-17-4 HCAPLUS

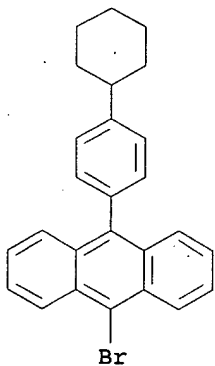
CN Anthracene, 9-bromo-10-(9,9-dicyclohexyl-9H-fluoren-2-yl)- (9CI)  
 (CA INDEX NAME)



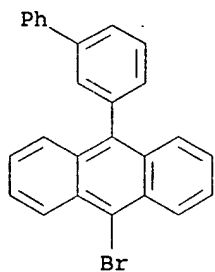
RN 844678-98-4 HCAPLUS  
CN Anthracene, 9-bromo-10-(3,5-dimethylphenyl)- (9CI) (CA INDEX NAME)



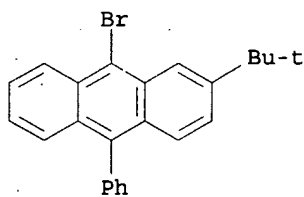
RN 844679-00-1 HCAPLUS  
CN Anthracene, 9-bromo-10-(4-cyclohexylphenyl)- (9CI) (CA INDEX NAME)



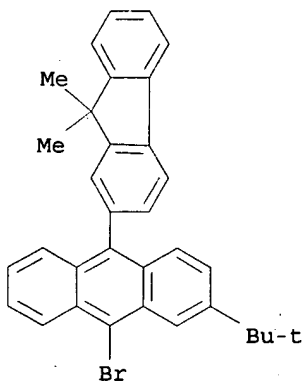
RN 844679-02-3 HCAPLUS  
CN Anthracene, 9-[1,1'-biphenyl]-3-yl-10-bromo- (9CI) (CA INDEX NAME)



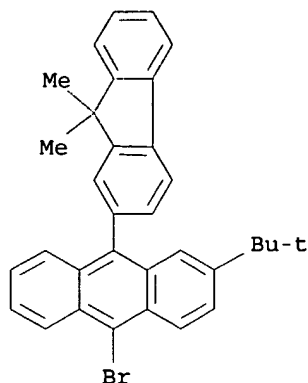
RN 844679-06-7 HCAPLUS  
CN Anthracene, 9-bromo-2-(1,1-dimethylethyl)-10-phenyl- (9CI) (CA INDEX NAME)



RN 844679-08-9 HCAPLUS  
CN Anthracene, 9-bromo-2-(1,1-dimethylethyl)-10-(9,9-dimethyl-9H-fluoren-2-yl)- (9CI) (CA INDEX NAME)



RN 844679-09-0 HCAPLUS  
CN Anthracene, 10-bromo-2-(1,1-dimethylethyl)-9-(9,9-dimethyl-9H-fluoren-2-yl)- (9CI) (CA INDEX NAME)



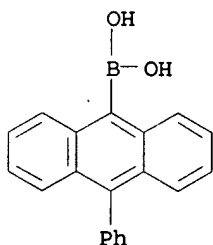
- IC ICM C07C015-30  
ICS C07C013-567; C07C043-205; C09K011-06; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25
- ST **electroluminescent device** asym substituted anthracene phosphor; asym phenanthrylanthracene fluorenylanthracene phosphor org EL
- IT **Electroluminescent devices**  
Phosphors  
(asym. substituted anthracene phosphors for high-luminance organic electroluminescent devices)
- IT Polycarbonates, uses  
RL: DEV (Device component use); USES (Uses)  
(**hole-injecting/transporting** layers; asym. substituted anthracene phosphors for high-luminance organic electroluminescent devices)
- IT 844678-95-1P 844678-96-2P 844678-97-3P 844678-99-5P  
844679-01-2P 844679-03-4P 844679-04-5P 844679-05-6P  
844679-07-8P 844679-10-3P 844679-11-4P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(anthracene phosphors; asym. substituted anthracene phosphors for high-luminance organic electroluminescent devices)
- IT 2085-33-8, Tris(8-quinolinolato)aluminum  
RL: DEV (Device component use); USES (Uses)  
(**electron-injecting/transporting** layers; asym. substituted anthracene phosphors for high-luminance organic electroluminescent devices)
- IT 9011-14-7, Poly(methyl methacrylate) 51325-05-4, Poly(2,5-thiophenediyl) 123847-85-8 124729-98-2  
RL: DEV (Device component use); USES (Uses)  
(**hole-injecting/transporting** layers; asym. substituted anthracene phosphors for high-luminance organic electroluminescent devices)
- IT 23674-20-6P 68572-87-2P 400607-12-7P 736158-96-6P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(in preparation of anthracene phosphors; asym. substituted anthracene phosphors for high-luminance organic electroluminescent devices)

- IT 121-43-7, Trimethyl borate 573-17-1, 9-Bromophenanthrene  
 602-55-1, 9-Phenylanthracene 7321-27-9, 2-Bromoanthracene  
 158902-11-5 333432-28-3 400607-00-3  
 817642-17-4 844678-98-4 844679-00-1  
 844679-02-3 844679-06-7 844679-08-9  
 844679-09-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in preparation of anthracene phosphors; asym. substituted anthracene  
 phosphors for high-luminance organic  
 electroluminescent devices)
- IT 517-51-1, Rubrene 142289-08-5 144810-08-2  
 RL: DEV (Device component use); USES (Uses)  
 (luminescent layers; asym. substituted anthracene phosphors for  
 high-luminance organic  
 electroluminescent devices)

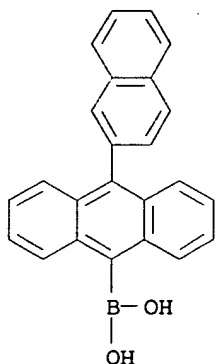
L105 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:780674 Document No. 141:303998 Preparation of nitrogen-containing  
 heterocycle derivative and organic **electroluminescent**  
 element using the same. Yamamoto, Hiroshi; Matsuura, Masahide;  
 Kubota, Mineyuki; Kawamura, Masahiro (Idemitsu Kosan Co., Ltd.,  
 Japan). PCT Int. Appl. WO 2004080975 A1 20040923, 81 pp.  
 DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR,  
 BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,  
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,  
 KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
 NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL,  
 SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW;  
 RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA,  
 GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.  
 (Japanese). CODEN: PIXXD2. APPLICATION: WO 2004-JP682 20040127.  
 PRIORITY: JP 2003-67847 20030313.

- IT 334658-75-2, (10-Phenylanthracen-9-yl)boronic acid  
 597554-03-5, [10-(Naphthalen-2-yl)anthracen-9-yl]boronic  
 acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of nitrogen-containing heterocycle derivative and organic  
**electroluminescent** elements using them)
- RN 334658-75-2 HCAPLUS
- CN Boronic acid, (10-phenyl-9-anthracenyl)- (9CI) (CA INDEX NAME)



- RN 597554-03-5 HCAPLUS
- CN Boronic acid, [10-(2-naphthalenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



- IC ICM C07D235-18  
ICS C07D401-04; C09K011-06; H05B033-14; H05B033-22
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 28
- ST benzimidazole prepn blue emitting org **electroluminescent** element
- IT **Electroluminescent devices**  
(blue-emitting; preparation of nitrogen-containing heterocycle derivative and organic **electroluminescent** elements using them)
- IT Luminescence, **electroluminescence**  
(blue; preparation of nitrogen-containing heterocycle derivative and organic **electroluminescent** elements using them)
- IT Heterocyclic compounds  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of nitrogen-containing heterocycle derivative and organic **electroluminescent** elements using them)
- IT **Electroluminescent devices**  
(thin-film, blue-emitting; preparation of nitrogen-containing heterocycle derivative and organic **electroluminescent** elements using them)
- IT 676345-55-4P, 2-[4-[10-(Naphthalen-2-yl)anthracen-9-yl]phenyl]-1-phenyl-1H-benzimidazole 760212-41-7P, 2-[3-[10-(Naphthalen-2-yl)anthracen-9-yl]phenyl]-1-phenyl-1H-benzimidazole 760212-44-0P, 1-Phenyl-2-[4-(10-phenylanthracen-9-yl)phenyl]-1H-benzimidazole 760212-48-4P, 1-Methyl-2-[4-[10-(naphthalen-2-yl)anthracen-9-yl]phenyl]-1H-benzimidazole 760212-51-9P, 2-[4-[10-(Naphthalen-2-yl)anthracen-9-yl]phenyl]-1-(2-pyridyl)-1H-benzimidazole 760212-53-1P, 2-[5-[10-(Naphthalen-2-yl)anthracen-9-yl]pyridin-3-yl]-1-phenyl-1H-benzimidazole 760212-56-4P, 1,2-Diphenyl-5-[10-(naphthalen-2-yl)anthracen-9-yl]-1H-benzimidazole 760212-59-7P, 1-[4-[10-(Naphthalen-2-yl)anthracen-9-yl]phenyl]-2-phenyl-1H-benzimidazole 760212-62-2P, 2-[6-[10-(Naphthalen-2-yl)anthracen-9-yl]pyridin-2-yl]-1-phenyl-1H-benzimidazole 760212-65-5P, 1-[4-[10-(Naphthalen-2-yl)anthracen-9-yl]phenyl]-2-(pyridin-2-yl)-1H-benzimidazole 760212-67-7P, 1-[4-[10-(Naphthalen-2-yl)anthracen-9-yl]phenyl]-2-methyl-1H-benzimidazole 760212-70-2P, 2-Methyl-5-[10-(naphthalen-2-yl)anthracen-9-yl]-1-phenyl-1H-benzimidazole 760212-74-6P, 1-Methyl-5-[10-(naphthalen-2-yl)anthracen-9-yl]-2-phenyl-1H-benzimidazole 760212-77-9P, 5-[10-(Naphthalen-2-yl)anthracen-9-yl]-1-phenyl-2-(2-pyridyl)-1H-benzimidazole  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of nitrogen-containing heterocycle derivative and organic **electroluminescent** elements using them)
- IT 62-53-3, Aniline, reactions 88-74-4, 2-Nitroaniline 98-88-4,

Benzoyl chloride 98-98-6, Picolinic acid 106-40-1,  
 4-Bromoaniline 108-24-7, Acetic anhydride 109-04-6,  
 2-Bromopyridine 534-85-0, N-Phenyl-1,2-phenylenediamine  
 585-76-2, 3-Bromobenzoic acid 586-76-5, 4-Bromobenzoic acid  
 612-28-2, N-Methyl-2-nitroaniline 619-58-9, 4-Iodobenzoic acid  
 3460-18-2, 2,5-Dibromonitrobenzene 20826-04-4, 5-Bromonicotinic  
 acid 21190-87-4, 6-Bromopicolinic acid 39901-94-5, Picolinoyl  
 chloride hydrochloride 334658-75-2, (10-Phenylanthracen-9-  
 yl)boronic acid 597554-03-5, [10-(Naphthalen-2-  
 yl)anthracen-9-yl]boronic acid 760212-66-6, N-[2-(4-  
 Bromophenylamino)phenyl]acetamide 760212-76-8,  
 5-Bromo-1-phenyl-2-(2-pyridyl)-1H-benzimidazole  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of nitrogen-containing heterocycle derivative and organic  
 electroluminescent elements using them)

IT 586-75-4P, 4-Bromobenzoyl chloride 2620-76-0P,  
 2-(4-Bromophenyl)-1-phenyl-1H-benzimidazole 16588-25-3P,  
 4-Bromo-2-nitrodiphenylamine 25551-61-5P, 2-Nitro-N-(2-  
 pyridyl)aniline 29745-44-6P, Picolinoyl chloride 53484-26-7P,  
 4-Bromo-N-methyl-2-nitroaniline 58476-59-8P, (4-Bromophenyl)(2-  
 nitrophenyl)amine 107411-29-0P, 1-(4-Bromophenyl)-2-methyl-1H-  
 benzimidazole 139487-69-7P, 6-Bromopicolinoyl chloride  
 359427-13-7P, 4-Bromo-N-(2-phenylaminophenyl)benzamide  
 760212-40-6P, 2-(3-Bromophenyl)-1-phenyl-1H-benzimidazole  
 760212-42-8P, 2-(4-Iodophenyl)-1-phenyl-1H-benzimidazole  
 760212-43-9P, 4-Iodo-N-(2-phenylaminophenyl)benzamide  
 760212-45-1P, 2-(4-Iodophenyl)-1-methyl-1H-benzimidazole  
 760212-46-2P, 4-Iodo-N-(2-methylaminophenyl)benzamide  
 760212-47-3P, N-(2-Aminophenyl)-4-iodo-N-methylbenzamide  
 760212-49-5P, 2-(2-Pyridylamino)-4'-bromobenzanilide 760212-50-8P,  
 1-(2-Pyridyl)-2-(4-bromophenyl)-1H-benzimidazole 760212-52-0P,  
 2-(5-Bromopyridin-3-yl)-1-phenyl-1H-benzimidazole 760212-54-2P,  
 5-Bromo-2-(phenylamino)benzaniline 760212-55-3P,  
 5-Bromo-1,2-diphenyl-1H-benzimidazole 760212-57-5P,  
 N-[2-(4-Bromophenylamino)phenyl]benzamide 760212-58-6P,  
 1-(4-Bromophenyl)-2-phenyl-1H-benzimidazole 760212-60-0P,  
 6-Bromo-2'-(phenylamino)picolinanilide 760212-61-1P,  
 2-(6-Bromopyridin-2-yl)-1-phenyl-1H-benzimidazole 760212-63-3P,  
 Picolinic acid N-[2-(4-bromophenylamino)phenyl]amide 760212-64-4P,  
 1-(4-Bromophenyl)-2-(pyridin-2-yl)-1H-benzimidazole 760212-68-8P,  
 5'-Bromo-2'-(phenylamino)acetanilide 760212-69-9P,  
 5-Bromo-2-methyl-1-phenyl-1H-benzimidazole 760212-71-3P,  
 4'-Bromo-N-methyl-2'-nitrobenzanilide 760212-72-4P,  
 4'-Bromo-N-methyl-2'-aminobenzanilide 760212-73-5P,  
 5-Bromo-1-methyl-2-phenyl-1H-benzimidazole 760212-75-7P,  
 5'-Bromo-2'-(phenylamino)picolinanilide  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)

(preparation of nitrogen-containing heterocycle derivative and organic  
 electroluminescent elements using them)

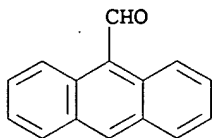
L105 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2004:606442 Document No. 141:147905 Preparation of nitrogenous  
 heterocyclic derivative and organic electroluminescent  
 element employing the same. Yamamoto, Hiroshi; Matsuura, Masahide;  
 Ikeda, Hidetsugu; Kubota, Mineyuki; Kawamura, Masahiro (Idemitsu  
 Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2004063159 A1 20040729,  
 148 pp. DESIGNATED STATES: W: CN, IN, KR, US; RW: AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR.  
 (Japanese). CODEN: PIXXD2. APPLICATION: WO 2003-JP12322 20030926.  
 PRIORITY: JP 2003-4139 20030110; JP 2003-5184 20030114.

IT 642-31-9, Anthracene-9-carboxaldehyde 100622-34-2  
 334658-75-2 400607-46-7 400607-48-9  
 597554-03-5 641144-16-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of nitrogenous heterocyclic derivs. and organic

electroluminescent element employing them)

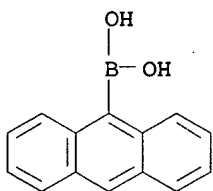
RN 642-31-9 HCAPLUS

CN 9-Anthracenecarboxaldehyde (9CI) (CA INDEX NAME)



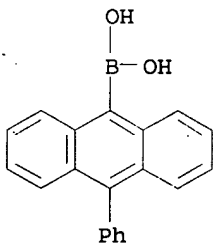
RN 100622-34-2 HCAPLUS

CN Boronic acid, 9-anthracenyl- (9CI) (CA INDEX NAME)



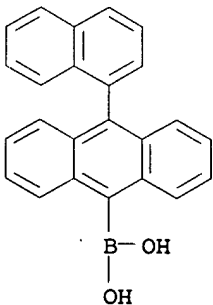
RN 334658-75-2 HCAPLUS

CN Boronic acid, (10-phenyl-9-anthracenyl)- (9CI) (CA INDEX NAME)



RN 400607-46-7 HCAPLUS

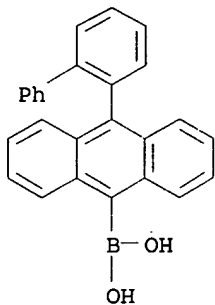
CN Boronic acid, [10-(1-naphthalenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



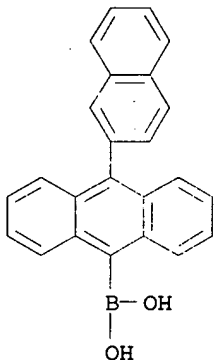
RN 400607-48-9 HCAPLUS

CN Boronic acid, (10-[1,1'-biphenyl]-2-yl-9-anthracenyl)- (9CI) (CA INDEX NAME)

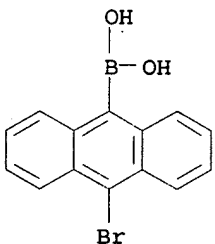




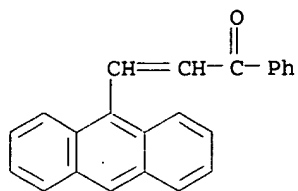
RN 597554-03-5 HCAPLUS  
 CN Boronic acid, [10-(2-naphthalenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



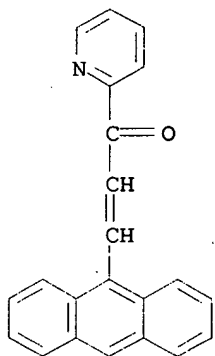
RN 641144-16-3 HCAPLUS  
 CN Boronic acid, (10-bromo-9-anthracenyl)- (9CI) (CA INDEX NAME)



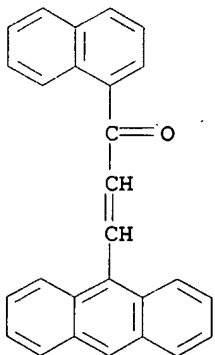
IT 19738-94-4P 163087-23-8P 174005-84-6P  
 641144-09-4P 641144-11-8P 641144-13-0P  
 641144-15-2P 641144-17-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (preparation of nitrogenous heterocyclic derivs. and organic  
 electroluminescent element employing them)  
 RN 19738-94-4 HCAPLUS  
 CN 2-Propen-1-one, 3-(9-anthracenyl)-1-phenyl- (9CI) (CA INDEX NAME)



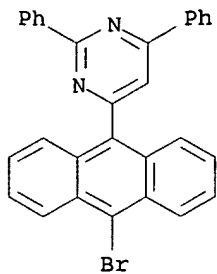
RN 163087-23-8 HCAPLUS  
CN 2-Propen-1-one, 3-(9-anthracenyl)-1-(2-pyridinyl)- (9CI) (CA INDEX NAME)



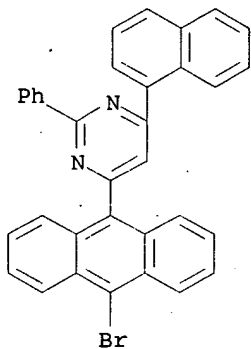
RN 174005-84-6 HCAPLUS  
CN 2-Propen-1-one, 3-(9-anthracenyl)-1-(1-naphthalenyl)- (9CI) (CA INDEX NAME)



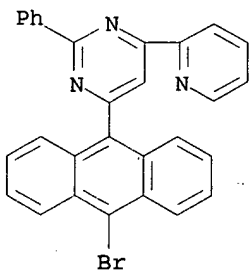
RN 641144-09-4 HCAPLUS  
CN Pyrimidine, 4-(10-bromo-9-anthracenyl)-2,6-diphenyl- (9CI) (CA INDEX NAME)



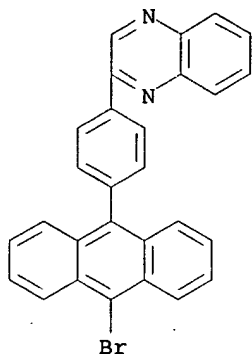
RN 641144-11-8 HCAPLUS  
CN Pyrimidine, 4-(10-bromo-9-anthracenyl)-6-(1-naphthalenyl)-2-phenyl-  
(9CI) (CA INDEX NAME)



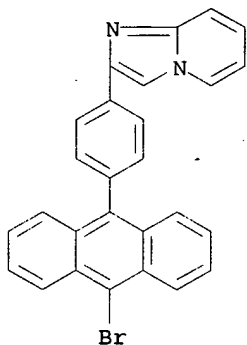
RN 641144-13-0 HCAPLUS  
CN Pyrimidine, 4-(10-bromo-9-anthracenyl)-2-phenyl-6-(2-pyridinyl)-  
(9CI) (CA INDEX NAME)



RN 641144-15-2 HCAPLUS  
CN Quinoxaline, 2-[4-(10-bromo-9-anthracenyl)phenyl]- (9CI) (CA INDEX  
NAME)



RN 641144-17-4 HCAPLUS  
 CN Imidazo[1,2-a]pyridine, 2-[4-(10-bromo-9-anthracenyl)phenyl]- (9CI)  
 (CA INDEX NAME)



IC ICM C07D213-22  
 ICS C07D215-04; C07D219-02; C07D239-26; C07D241-42; C07D251-24;  
 C07D253-06; C07D401-04; C07D471-04; C07D487-04; C09K011-06;  
 H05B033-14; H05B033-22  
 CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 28  
 ST nitrogenous heterocyclic prepn org **electroluminescent**  
 element **electron injection** layer;  
 naphthalenylanthracenylphenylimidazopyridine prepn org  
**electroluminescent device**  
 IT **Electroluminescent devices**  
 Luminescence, **electroluminescence**  
 (preparation of nitrogenous heterocyclic derivs. and organic  
**electroluminescent** element employing them)  
 IT Heterocyclic compounds  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)  
 (preparation of nitrogenous heterocyclic derivs. and organic  
**electroluminescent** element employing them)  
 IT **Electroluminescent devices**  
 (thin-film; preparation of nitrogenous heterocyclic derivs. and organic  
**electroluminescent** element employing them)  
 IT 641143-78-4P 641143-79-5P 641143-80-8P 641143-81-9P  
 641143-82-0P 641143-83-1P 641143-84-2P 641143-85-3P  
 641143-86-4P 641143-87-5P 641143-88-6P 641143-89-7P  
 641143-90-0P 641143-91-1P 641143-92-2P 641143-93-3P  
 641143-94-4P 641143-95-5P 641143-96-6P 641143-97-7P

641143-98-8P 641143-99-9P 641144-00-5P 641144-01-6P  
641144-02-7P 641144-03-8P 641144-04-9P 641144-05-0P  
641144-06-1P 641144-07-2P 676345-56-5P 726138-17-6P  
726138-18-7P 726138-19-8P 726138-20-1P 726138-21-2P  
726138-22-3P 726138-23-4P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation of nitrogenous heterocyclic derivs. and organic electroluminescent element employing them)

IT 70-11-1, Phenacyl bromide 75-36-5, Acetyl chloride 92-66-0, 4-Bromobiphenyl 95-54-5, 1,2-Phenylenediamine, reactions 98-80-6, Phenylboronic acid 98-86-2, Acetophenone, reactions 99-73-0, 2,4'-Dibromoacetophenone 99-90-1 109-12-6, 2-Aminopyrimidine 504-29-0, 2-Aminopyridine 613-94-5, Benzoylhydrazine 642-31-9, Anthracene-9-carboxaldehyde 695-34-1, 2-Amino-4-picoline 941-98-0, 1-Acetylnaphthalene 1072-97-5, 2-Amino-5-bromopyridine 1122-62-9, 2-Acetylpyridine 1122-91-4, 4-Bromobenzaldehyde 1137-41-3, 4-Aminobenzophenone 1207-69-8, 9-Chloroacridine 1532-84-9, 1-Aminoisoquinoline 1603-40-3, 2-Amino-3-picoline 1603-41-4, 2-Amino-5-picoline 1670-14-0, Benzamidinium hydrochloride 2142-63-4, 3'-Bromoacetophenone 4688-76-0 10342-83-3, 4'-Bromopropiophenone 13922-41-3, 1-Naphthylboronic acid 32316-92-0, 2-Naphthylboronic acid 35486-42-1, 2-Amino-3,5-dibromopyridine 68572-87-2 94255-63-7 100622-34-2 128143-89-5, 4'-Chloro-[2,2'; 6',2'']terpyridine 128388-54-5 334658-75-2 359012-63-8 400607-46-7 400607-48-9 597554-03-5 641144-16-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of nitrogenous heterocyclic derivs. and organic electroluminescent element employing them)

IT 838-32-4P 888-61-9P 1023-01-4P, 2-(4-Bromophenyl)-6-methylimidazo[1,2-a]pyridine 1774-66-9P 4044-98-8P 5021-45-4P 5731-01-1P 13329-40-3P, 4'-Iodoacetophenone 19738-94-4P 31408-23-8P, 2-Amino-5-phenylpyrimidine 31827-94-8P, 2-Bromo-4'-iodoacetophenone 33421-40-8P 34658-66-7P, 2-(4-Bromophenyl)imidazo[1,2-a]pyridine 38786-67-3P, 2,4'-Dibromopropiophenone 56921-85-8P 58536-46-2P 61001-06-7P 64493-70-5P 73402-91-2P 94512-73-9P 118001-58-4P 163087-23-8P 174005-84-6P 214958-27-7P 419557-33-8P 641144-08-3P 641144-09-4P 641144-10-7P 641144-11-8P 641144-12-9P 641144-13-0P 641144-14-1P 641144-15-2P 641144-17-4P 641144-18-5P 726138-24-5P 726138-25-6P 726138-26-7P 726138-27-8P 726138-28-9P 726138-29-0P 726138-30-3P 726138-31-4P 726138-32-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of nitrogenous heterocyclic derivs. and organic electroluminescent element employing them)

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2004:331637 Document No. 140:365374 Organic light-emitting diode devices with improved operational stability. Jarikov, Viktor V. (Eastman Kodak Company, USA). U.S. Pat. Appl. Publ. US 2004076853 A1 20040422, 108 pp., Cont.-in-part of U.S. Ser. No. 131,801, abandoned. (English). CODEN: USXXCO. APPLICATION: US 2003-634324 20030805. PRIORITY: US 2002-131801 20020424.

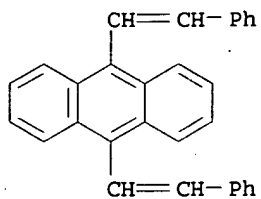
IT 1254-43-9 97083-12-0

RL: DEV (Device component use); USES (Uses)

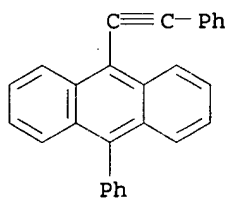
(organic light-emitting diode devices using luminescent mixts.)

RN 1254-43-9 HCAPLUS

CN Anthracene, 9,10-bis(2-phenylethenyl)- (9CI) (CA INDEX NAME)

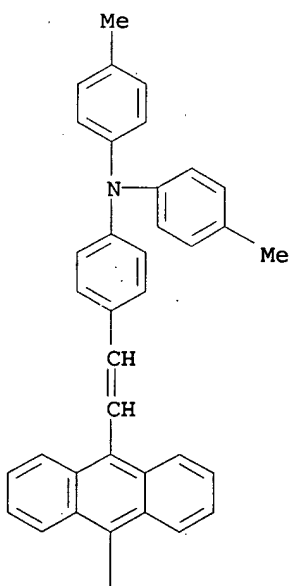


RN 97083-12-0 HCAPLUS  
 CN Anthracene, 9-phenyl-10-(phenylethynyl)- (6CI, 7CI, 9CI) (CA INDEX NAME)

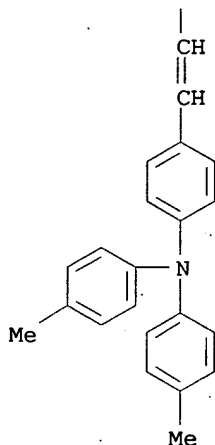


IT 55035-47-7, 9,10-Bis[4-(di-p-tolylamino)styryl]anthracene  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (organic light-emitting diode devices  
 using luminescent mixts.)  
 RN 55035-47-7 HCAPLUS  
 CN Benzenamine, 4,4'-(9,10-anthracenediyl-di-2,1-ethenediyl)bis(N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM H05B033-14  
 INCL 428690000; 428917000; 313504000  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25, 27, 28, 76  
 ST org light emitting device luminescent mixt  
 IT Luminescent substances  
 (organic light-emitting diode devices using luminescent mixts.)  
 IT Fluorescent dyes  
 Phosphorescent substances  
 (organic light-emitting diode devices using luminescent mixts. containing)  
 IT Electroluminescent devices  
 (organic; organic light-emitting diode devices using luminescent mixts.)  
 IT 54811-28-8, 2,9-Diphenylcoronene  
 RL: DEV (Device component use); USES (Uses)  
 (2,9-diphenylcoronene; organic light-emitting diode devices using luminescent mixts.)  
 IT 6542-08-1, 8H-Dibenzo[b,mn]phenanthrene  
 RL: DEV (Device component use); USES (Uses)  
 (8H-dibenzo[b,mn]phenanthrene; organic light-emitting diode devices using luminescent mixts.)  
 IT 284673-30-9, CFDMQA  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (CFDMQA; organic light-emitting diode devices using luminescent mixts.)  
 IT 51325-95-2, DCJ  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (DCJ; organic light-emitting diode devices using luminescent mixts.)  
 IT 159788-00-8, DCJT  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (DCJT; organic light-emitting diode devices using luminescent mixts.)  
 IT 463943-63-7, DCJTBz  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (DCJTBz; organic light-emitting diode

devices using luminescent mixts.)  
 IT 200052-72-8, DCJTE  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (DCJTE; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 213749-94-1, DCJTMes  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (DCJTMes; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 200052-71-7, DCJTTP  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (DCJTTP; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 19205-19-7, DMQA  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (DMQA; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 682334-88-9, DPMB 1  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (DPMB 1; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 682334-89-0, DPMB 2  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (DPMB 2; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 682334-90-3, DPMB 3  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (DPMB 3; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 175606-05-0  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (Red 2; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 616235-15-5  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (Yellow green 2; organic light-emitting diode  
 devices using luminescent mixts.)  
 IT 19770-52-6, Benz[d]aceanthrylene  
 RL: DEV (Device component use); USES (Uses)  
 (benz[d]aceanthrylene; organic light-emitting  
 diode devices using luminescent mixts.)  
 IT 197-67-1, Tetrabenzo[a,fg,ij,ol]pentaphene  
 RL: DEV (Device component use); USES (Uses)  
 (dinaphtho[1,2-b:2',1'-n]perylene; organic light-  
 emitting diode devices using luminescent  
 mixts.)  
 IT 196-28-1, Naphtho[1,2-a]pyrene  
 RL: DEV (Device component use); USES (Uses)  
 (naphtho[1,2-a]pyrene; organic light-emitting  
 diode devices using luminescent mixts.)  
 IT 35699-67-3, Naphtho[8,1,2-ghi]chrysene  
 RL: DEV (Device component use); USES (Uses)  
 (naphtho[1,2-e]pyrene; organic light-emitting  
 diode devices using luminescent mixts.)  
 IT 50-32-8, Benzo[a]pyrene, uses 53-70-3, 1,2 5,6-Benzanthracene  
 56-55-3, Tetraphene 56-55-3D, Tetraphene, derivs. 66-71-7,  
 1,10-Phenanthroline, 71-43-2, [6]Annulene, uses 83-32-9,



Acenaphthene 85-01-8, Phenanthrene, uses 85-01-8D, Phenanthrene, derivs. 86-73-7, Fluorene 86-74-8, Carbazole 91-20-3, Naphthalene, uses 91-22-5, Quinoline, uses 92-24-0, Naphthacene 92-24-0D, Naphthacene, derivs. 92-52-4, Biphenyl, uses 92-82-0, Phenazine 92-83-1, Xanthene 95-13-6, Indene 95-15-8, Benzo[b]thiophene 109-97-7, Pyrrole 110-00-9, Furan 110-02-1, Thiophene 110-86-1, Pyridine, uses 119-65-3, Isoquinoline 119-91-5, 2,2'-Biquinoline 120-12-7, Anthracene, uses 120-72-9, Indole, uses 120-73-0, Purine 129-00-0, Pyrene, uses 129-00-0D, Pyrene, derivs. 132-64-9, Dibenzofuran 132-65-0, Dibenzothiophene 135-48-8, Pentacene 135-48-8D, Pentacene, derivs. 147-14-8, Copper phthalocyanine 165-39-9, Benzo[k]fluorene 187-83-7, [6]Helicene 187-94-0, 3,4,11,12-Dibenzobisanthene 187-95-1, Perylo[3,2,1,12-pqra]perylene 188-00-1, Dibenzo[fg,ij]phenanthro[9,10,1,2,3-pqrst]pentaphene 188-11-4, Benzo[pqr]dinaphtho[8,1,2-bcd:2',1',8'-lmn]perylene 188-13-6, Tetrabenzo[de,h,kl,rst]pentaphene 188-16-9, 2,12-Dioxadibenzo[jk,uv]biscyclopenta[3,4]naphtho[2,1,8,7-defg:2',1',8',7'-opqr]pentacene 188-42-1, Naphthaceno[2,1,12,11-opqra]naphthacene 188-50-1, peri-Naphthacenonaphthacene 188-51-2, Benzo[2,1-a:3,4-a']dianthracene 188-52-3, Dibenzo[c,g]phenanthrene 188-67-0, Dibenzo[f,j]picene 188-69-2, 11H-Indeno[1,2-a]triphenylene 188-72-7, Terrylene 188-73-8, Quaterylene 188-84-1, Benzo[rst]phenanthro[10,1,2-cde]pentaphene 188-87-4, Anthra[9,1,2-cde]benzo[rst]pentaphene 188-89-6, Naphtho[8,1,2-bcd]perylene 188-90-9, Dinaphtho[2,1,8,7-defg:2',1',8',7'-ijkl]pentaphene 188-91-0, Dinaphtho[2,1,8,7-defg:2',1',8',7'-opqr]pentacene 188-94-3, Periflanthene 188-96-5, Peropyrene 188-96-5D, Peropyrene, derivs. 189-01-5, Aceperylene 189-18-4, Benzo[a]naphtho[2,1-h]pyrene 189-52-6, Anthra[2,1,9-gra]naphthacene 189-55-9, Benzo[rst]pentaphene 189-64-0, Dibenzo[b,def]chrysene 189-71-9, 8H-Dibenzo[b,fg]pyrene 189-73-1, 6H-Naphtho[1,2,3-cd]pyrene 189-96-8, Benzo[pqr]picene 190-01-2, Benzo[a]naphtho[8,1,2-lmn]naphthacene 190-05-6, Benzo[a]naphtho[2,1,8-hij]naphthacene 190-12-5, 1H-Indeno[6,7,1-mna]anthracene 190-24-9, 1,12,2,3,4,5,6,7,8,9,10,11-Hexabenzocoronene 190-24-9D, Hexabenzo[bc,ef,hi,kl,no,qr]coronene, derivs. 190-25-0, Tetrabenzo[gh,jk,tu,wx]pyranthrene 190-26-1, Ovalene 190-28-3, Phenanthro[3,4,5,6-bcdef]ovalene 190-31-8, 1,14-Benzobisanthene 190-36-3, o-meso-Benzodianthrene 190-39-6, Phenanthro[1,10,9,8-opqra]perylene 190-47-6, Dinaphtho[8,1,2-abc:8',1',2'-jkl]coronene 190-55-6, Dibenzo[bc,kl]coronene 190-61-4, 8H-Tribenzo[a,cd,l]pyrene 190-66-9, Dibenzo[a,g]coronene 190-70-5, Benzo[a]coronene 190-70-5D, Benzo[a]coronene, derivs. 190-71-6, Benzo[pqr]naphtho[8,1,2-bcd]perylene 190-72-7, Dibenzo[a,j]coronene 190-74-9, Naphtho[2,3-a]coronene 190-81-8, Tribenzo[b,n,pqr]perylene 190-81-8D, Tribenzo[b,n,pqr]perylene, derivs. 190-84-1, Naphtho[1,2,3,4-ghi]perylene 190-87-4, Benzo[qr]naphtho[2,1,8,7-fghi]pentacene 190-88-5, Benzo[ghi]cyclopenta[cd]perylene 190-89-6, Diphenanthro[5,4,3-abcd:5',4',3'-jklm]perylene 190-90-9, Benzo[rs]dinaphtho[2,1,8,7-klmn:3',2',1',8',7'-vwxyz]hexaphene 190-93-2, Benzo[rst]phenanthro[1,10,9-cde]pentaphene 190-95-4, Dibenzo[b,pqr]perylene 191-03-7, Tetrabenzo[a,f,j,o]perylene 191-06-0, Dibenzo[lm,yz]pyranthrene 191-07-1, Coronene 191-07-1D, Coronene, derivs. 191-12-8, Benzo[a]pyranthrene 191-13-9, Pyranthrene 191-13-9D, Pyranthrene, derivs. 191-20-8, Naphtho[1,2,3,4-rst]pentaphene 191-23-1, Diindeno[1,2,3-cd:1',2',3'-jk]pyrene 191-24-2, Benzo[ghi]perylene 191-24-2D, Benzo[ghi]perylene, derivs. 191-26-4, Anthanthrene 191-26-4D, Anthanthrene, derivs. 191-29-7, Dibenzo[a,f]perylene 191-30-0, Dibenzo[def,p]chrysene 191-32-2, 2H-Benzo[cd]pyrene 191-33-3, 6H-Benzo[cd]pyrene 191-34-4, 5H-Benzo[cd]pyrene 191-35-5, 3H-Benzo[cd]pyrene 191-46-8, Dibenzo[a,rst]naphtho[8,1,2-cde]pentaphene 191-48-0, Decacyclene 191-53-7,

Tetrabenzo[a,cd,j,lm]perylene 191-67-3, Naphtho[1,2-g]chrysene  
 191-68-4, Dibenzo[a,c]triphenylene 191-79-7,  
 Tetrabenzo[de,hi,op,st]pentacene 191-81-1, Dibenzo[a,n]perylene  
 191-82-2, Dinaphtho[2,1-a:2',1'-j]perylene 191-85-5,  
 Benzo[a]perylene 191-87-7, Dibenzo[a,j]perylene 192-11-0,  
 Ceranthrene 192-28-9, Benz[a]acephenanthrylene 192-35-8,  
 Fluoreno[3,2,1,9-defg]chrysene 192-42-7, Isorubicene 192-47-2,  
 Dibenzo[h,rst]pentaphene 192-51-8, Dibenzo[fg,op]naphthacene  
 192-51-8D, Dibenzo[fg,op]naphthacene, derivs. 192-57-4D,  
 Tetrabenzo[fg,lm,uv,alb1]heptacene, derivs. 192-58-5,  
 Tetrabenzo[a,c,hi,qr]pentacene 192-58-5D,  
 Tetrabenzo[a,c,hi,qr]pentacene, derivs. 192-65-4,  
 Dibenzo[a,e]pyrene 192-70-1, Benzo[a]naphtho[8,1,2-cde]naphthacene  
 192-77-8, 9H-Benz[4,5]indeno[2,1-c]phenanthrene 192-84-7,  
 9H-Benz[5,6]indeno[2,1-c]phenanthrene 192-87-0,  
 9H-Indeno[2,1-c]phenanthrene 192-89-2, Benz[a]indeno[5,6-  
 g]fluorene 192-97-2, Benzo[e]pyrene 193-09-9,  
 Naphtho[2,3-e]pyrene 193-11-3, Dibenzo[de,uv]pentacene 193-21-5,  
 Acenaphtho[1,2-j]fluoranthene 193-39-5, Indeno[1,2,3-cd]pyrene  
 193-43-1, Indeno[1,2,3-cd]fluoranthene 193-69-1,  
 1H-Benz[fg]aceanthrylene 193-98-6, Naphth[2,1,8-def]isoquinoline  
 194-00-3, Benzo[lmn][3,8]phenanthroline 194-03-6, Thebenidine  
 194-27-4, 5H-Benz[fg]acenaphthylene 194-45-6, Dinaphtho[1',2':2,3;  
 2'',1'':10,11]perylene[1,12]furan 194-58-1, 7H-Dibenzo[c,g]fluorene  
 194-59-2, 7H-Dibenzo[c,g]carbazole 194-63-8, Dinaphtho[2,1-b:1',2'-  
 d]furan 194-69-4, Benzo[c]chrysene 194-83-2,  
 7H-Dibenz[a,kl]anthracene 194-84-3, 1H-Dibenz[a,kl]anthracene  
 194-85-4, 4H-Dibenz[a,kl]anthracene 195-00-6, Anthra[1,2-  
 a]anthracene 195-06-2, Dibenzo[b,g]phenanthrene 195-19-7,  
 Benzo[c]phenanthrene 195-88-0, Anthra[9,1-bc]fluorene 195-90-4,  
 6H-Cyclopenta[ghi]picene 196-36-1, 11H-Indeno[2,1-a]pyrene  
 196-42-9, Naphtho[2,3-a]pyrene 196-45-2, Naphtho[2,1,8-  
 uva]pentacene 196-46-3, Naphtho[2,1,8-ya]hexacene 196-52-1,  
 Dibenzo[c,p]chrysene 196-62-3, Dinaphth[2,3-a,2',3'-c]anthracene  
 196-64-5, Naphtho[2,3-g]chrysene 196-77-0,  
 Benzo[def]cyclopenta[hi]chrysene 196-78-1, Benzo[g]chrysene  
 196-87-2, 11H-Cyclopenta[a]triphenylene 197-61-5, Rubicene  
 197-61-5D, Rubicene, derivs. 197-69-3, Dibenzo[b,n]perylene  
 197-79-5, 13H-Benz[b]cyclopenta[def]triphenylene 198-08-3,  
 7H-Indeno[1,2-a]phenanthrene 198-19-6, Indeno[1,2-a]phenalene  
 198-30-1, 13H-Dibenzo[b,mn]phenanthrene 198-40-3,  
 4H-Dibenzo[a,de]naphthacene 198-45-8, 4H-Dibenzo[a,de]pentacene  
 198-46-9, Benzo[de]cyclopent[a]anthracene 198-56-1,  
 Phenaleno[1,2,3-de]quinoline 198-65-2, Benzo[1,2,3-de:4,5,6-  
 d'e']diquinoline 198-88-9, Benzo[1,2-b:3,4-b']bisbenzofuran  
 198-93-6, Fluoreno[3,4-b]fluorene 198-95-8, 8H-Indeno[1,2-  
 a]anthracene 199-21-3, Benz[a]indeno[1,2-c]fluorene 199-54-2,  
 Benz[e]aceanthrylene 199-95-1, 1H-Benz[de]anthracene 200-63-5,  
 Benzo[fg]cyclopent[a]anthracene 200-71-5, Indeno[2,1-a]phenalene  
 201-27-4, Naphth[1,2-k]acephenanthrylene 201-42-3,  
 13H-Acenaphtho[1,8-ab]phenanthrene 201-50-3, 15H-  
 Benz[4,5]indeno[1,2-l]phenanthrene 201-65-0, 13H-  
 Dibenzo[a,c]fluorene 201-72-9, Benz[c]indeno[2,1-a]fluorene  
 202-03-9, Aceanthrylene 202-33-5, Benz[j]aceanthrylene 202-94-8,  
 11H-Benz[bc]aceanthrylene 202-98-2, 4H-Cyclopenta[def]chrysene  
 203-06-5, Anthra[1,2-a]aceanthrylene 203-07-6,  
 Dibenz[a,l]aceanthrylene 203-11-2, Indeno[1,2,3-fg]naphthacene  
 203-12-3, Benzo[ghi]fluoranthene 203-13-4, Benz[mno]aceanthrylene  
 203-18-9, Dibenzo[j,l]fluoranthene 203-20-3, 15,16-  
 Benzodehydrocholanthrene 203-21-4, Anthra[2,1-a]aceanthrylene  
 203-25-8, Dibenzo[b,ghi]fluoranthene 203-33-8,  
 Benz[a]aceanthrylene 203-64-5, Benzo[def]fluorene 203-80-5,  
 Phenalene 204-89-7, 7H-Dibenzo[b,g]fluorene 204-91-1,  
 Dinaphtho[2,1-b:2',3'-d]furan 205-12-9, 7H-Benz[c]fluorene  
 205-25-4, 7H-Benz[c]carbazole 205-82-3, 7,8-Benzfluoranthene  
 205-83-4, Acenaphth[1,2-a]anthracene 205-97-0,

Dibenzo[b,k]fluoranthene 205-99-2, 3,4-Benz[e]acephenanthrylene  
 206-06-4, Dibenz[e,k]acephenanthrylene 206-44-0, Fluoranthene  
 206-44-0D, Fluoranthene, derivs. 207-02-3, Acenaphtho[1,2-  
 k]fluoranthene 207-08-9, Benzo[k]fluoranthene 207-18-1,  
 Acenaphth[1,2-b]anthracene 207-83-0, 13H-Dibenzo[a,g]fluorene  
 208-37-7, Benzo[1,2-b:4,5-b']bisbenzofuran 208-96-8,  
 Acenaphthylene 210-65-1, as-Indacene 211-91-6,  
 Benz[l]aceanthrylene 212-41-9, Benz[k]acephenanthrylene  
 212-54-4, 13H-Indeno[1,2-c]phenanthrene

RL: DEV (Device component use); USES (Uses)

(organic light-emitting diode devices  
 using luminescent mixts.)

IT 213-44-5, Dibenzo[b,n]picene 213-46-7, Picene 213-46-7D, Picene,  
 derivs. 213-51-4, Benzo[h]naphtho[1,2-c]cinnoline 214-13-1,  
 Dinaphtho[1,2-b:1',2'-k]chrysene 214-15-3, Benzo[b]naphtho[1,2-  
 k]chrysene 214-16-4, Anthra[2,1-a]naphthacene 214-17-5,  
 Benzo[b]chrysene 214-63-1, Dibenzo[de,mn]naphthacene 214-91-5,  
 Benzo[h]pentaphene 215-11-2, Phenanthro[9,10-b]triphenylene  
 215-11-2D, Phenanthro[9,10-b]triphenylene, derivs. 215-12-3,  
 Tetrabenz[a,c,h,j]acridine 215-14-5, Phenanthrazine 215-26-9,  
 Naphtho[1,2-b]triphenylene 215-58-7, Benzo[b]triphenylene  
 215-58-7D, Benzo[b]triphenylene, derivs. 215-62-3,  
 Dibenz[a,c]acridine 215-95-2, Tetrabenz[a,c,j,l]naphthacene  
 215-96-3, Tribenzo[a,c,j]naphthacene 216-00-2,  
 Dibenzo[a,c]naphthacene 216-07-9, Tetrabenz[a,c,l,n]pentacene  
 216-08-0, Dibenzo[a,c]pentacene 216-48-8, Benz[j]acephenanthrylene  
 216-53-5, 7H-Benzo[h]chrysene 216-54-6, 4H-Benzo[h]chrysene  
 217-37-8, Benzo[c]picene 217-42-5, Benzo[b]picene 217-54-9,  
 Anthraceno[2,1-a]anthracene 217-59-4, Triphenylene 217-59-4D,  
 Triphenylene, derivs. 217-65-2, Dibenzo[f,h]quinoline 217-68-5,  
 Dibenzo[f,h]quinoxaline 217-73-2, Benzo[f][1,10]phenanthroline  
 217-88-9, Pyrido[2,3-f][1,7]phenanthroline 218-01-9, Chrysene  
 218-01-9D, Chrysene, derivs. 218-16-6, Benzo[i]phenanthridine  
 218-38-2, Benzo[c]phenanthridine 219-07-8, 15H-  
 Cyclopenta[a]phenanthrene 219-08-9, 17H-Cyclopenta[a]phenanthrene  
 220-77-9, Naphtho[1,2-b]chrysene 220-78-0, Phenanthro[1,2-  
 b]chrysene 220-82-6, Naphtho[2,1-a]naphthacene 220-97-3,  
 11H-Indeno[2,1-a]phenanthrene 221-15-8, Fluoreno[2,1-a]fluorene  
 222-51-5, Dibenzo[c,m]pentaphene 222-54-8, Benzo[c]pentaphene  
 222-58-2, Naphtho[2,3-c]pentaphene 222-75-3, Heptaphene  
 222-78-6, Hexaphene 222-78-6D, Hexaphene, derivs. 222-81-1,  
 Benzo(p)hexaphene 222-88-8, Cyclopent[i]indeno[5,6-a]anthracene  
 222-93-5, Pentaphene 222-93-5D, Pentaphene, derivs. 223-20-1,  
 Dibenzo[b,j][1,10]phenanthroline 223-31-4, 13H-Indeno[2,1-  
 a]anthracene 223-66-5, Fluoreno[2,3-a]fluorene 224-03-3,  
 8H-Cyclopenta[b]phenanthrene 224-41-9, Dibenz[a,j]anthracene  
 224-42-0, Dibenz[a,j]acridine 224-53-3, Dibenz[c,h]acridine  
 224-56-6, Dibenzo[a,j]phenazine 224-89-5, Naphtho[1,2-g]quinoline  
 225-06-9, Benzo[b]phenanthridine 225-07-0, Dibenzo[c,g]cinnoline  
 225-11-6, Benz[a]acridine 225-51-4, Benz[c]acridine 225-87-6,  
 Benzo[b][1,10]phenanthroline 226-36-8, Dibenz[a,h]acridine  
 226-47-1, Dibenzo[a,h]phenazine 226-78-8, 9H-  
 Benzo[a]cyclopent[i]anthracene 226-86-8, Dibenzo[a,l]naphthacene  
 226-88-0, Benzo[a]naphthacene 226-92-6, Dibenz[a,i]acridine  
 226-98-2, Dibenzo[a,i]phenazine 227-04-3, Dibenzo[a,j]naphthacene  
 227-07-6, Dibenzo[a,n]pentacene 227-09-8, Dibenzo[a,l]pentacene  
 227-50-9, 1H-Cyclopent[a]anthracene 229-15-2, 7H-  
 Benzo[de]pentacene 229-67-4, Benz[f]isoquinoline 229-71-0,  
 Benz[h]isoquinoline 229-87-8, Phenanthridine 230-07-9,  
 4,7-Phenanthroline 230-17-1, Benzo[c]cinnoline 230-45-5,  
 1,9-Phenanthroline 230-46-6, 1,7-Phenanthroline 230-51-3,  
 Benzo[h]-1,6-naphthyridine 232-54-2, 1H-Benz[e]indene 232-55-3,  
 3H-Benz[e]indene 235-91-6, 2H-Cyclopenta[l]phenanthrene  
 235-92-7, 1H-Cyclopenta[l]phenanthrene 236-09-9,  
 Phenanthro[9,10-d]oxazole 238-04-0, Acenaphtho[1,2-b]phenanthrene  
 238-84-6, 11H-Benzo[a]fluorene 239-01-0, 11H-Benzo[a]carbazole

239-30-5, Benzo[b]naphtho[2,1-d]furan 239-60-1,  
 13H-Dibenzo[a,i]fluorene 239-64-5, 13H-Dibenzo[a,i]carbazole  
 239-69-0, Dinaphtho[1,2-b:2',1'-d]furan 239-85-0,  
 13H-Dibenzo[a,h]fluorene 239-90-7, Dinaphtho[1,2-b:2',3'-d]furan  
 239-98-5, Benzo[a]pentacene 240-04-0, Benzo[a]hexacene 240-44-8,  
 1H-Benzo[a]cyclopent[h]anthracene 241-28-1, 8H-Indeno[2,1-  
 b]phenanthrene 242-47-7, 12H-Dibenzo[b,h]fluorene 242-51-3,  
 Dinaphtho[2,3-b:2',3'-d]furan 243-17-4, 11H-Benzo[b]fluorene  
 243-42-5, Benzo[b]naphtho[2,3-d]furan 248-83-9,  
 12H-Indeno[1,2-b]phenanthrene 248-93-1, 13H-Indeno[1,2-  
 b]anthracene 250-25-9, Pentalene 253-66-7, Cinnoline 253-69-0,  
 1,7-Naphthyridine 253-72-5, 1,6-Naphthyridine 253-82-7,  
 Quinazoline 254-18-2, Benzoxazine 254-60-4, 1,8-Naphthyridine  
 254-79-5, 1,5-Naphthyridine 257-81-8, Naphtho[2,3-g]quinoline  
 257-89-6, Benz[b]acridine 257-95-4, Dibenzo[b,g][1,8]naphthyridine  
 257-96-5, Dibenzo[b,g][1,5]naphthyridine 257-97-6,  
 Benzo[b]phenazine 258-31-1, Hexacene 258-31-1D, Hexacene,  
 derivs. 258-33-3, Octacene 258-36-6, Nonacene 258-38-8,  
 Heptacene 259-06-3, 1H-Cyclopent[b]anthracene 259-14-3,  
 Anthra[2,3-d]oxazole 260-32-2, Benz[g]isoquinoline 260-36-6,  
 Benzo[g]quinoline 260-38-8, Benzo[g]quinazoline 260-94-6,  
 Acridine 267-21-0, s-Indacene 268-40-6, 1H-Benz[f]indene  
 270-75-7, Isobenzofuran 270-82-6, Benzo[c]thiophene 271-30-7,  
 Pyrano[3,4-b]pyrrole 271-44-3, Indazole 271-89-6, Benzofuran  
 273-53-0, Benzoxazole 288-13-1, Pyrazole 288-14-2, Isoxazole  
 288-16-4, Isothiazole 288-21-1, 5H-1,2-Oxathiole 288-26-6,  
 1,2-Dithiole 288-32-4, Imidazole, uses 288-37-9,  
 1,2,5-Oxadiazole 288-42-6, Oxazole 288-47-1, Thiazole  
 288-49-3, 5H-1,2,5-Oxathiazole 288-67-5, 1,3-Oxathiole 288-74-4,  
 1,3-Dithiole 288-88-0, 1H-1,2,4-Triazole 288-90-4,  
 1,2,4-Oxadiazole 288-98-2, 3H-1,2,4-Dioxazole 288-99-3,  
 1,3,4-Oxadiazole 289-00-9, 1,2,3,4-Oxatriazole 289-02-1,  
 1,4,2-Dioxazole 289-80-5, Pyridazine 289-95-2, Pyrimidine  
 289-96-3, 1,2,3-Triazine 290-37-9, Pyrazine 290-38-0,  
 1,2,4-Triazine 290-87-9, 1,3,5-Triazine 313-65-5,  
 Dibenzo[ij,rst]phenanthro[9,10,1,2-defg]pentaphene 313-65-5D,  
 derivs. 313-66-6, Naphtho[2,1-a]perylene 313-80-4,  
 Naphtho[2,1,8-def]quinoline 313-97-3, Dibenzo[fg,st]hexacene  
 314-51-2, Dibenzo[a,f]fluoranthene 333-84-6, 1,2,3,5-Oxatriazole  
 385-14-8, Benzo(p)naphtho[1,8,7-ghi]chrysene 477-75-8, Triptycene  
 479-23-2, Cholanthrene 548-35-6 602-15-3 668-30-4,  
 Dibenzo[b,mno]fluoranthene 735-72-8, 2,2'-Biquinazoline  
 1055-23-8, 9,9'-Bianthracene 1065-80-1, Hexabenzocoronene  
 1065-80-1D, Hexabenzocoronene, derivs. 1250-59-5,  
 2,2'-Bianthracene 1254-43-9 2085-33-8,  
 Tris(8-hydroxyquinolinato)aluminum 2828-72-0, Benzo[vwx]hexaphene  
 2997-45-7, Dibenz[a,e]acephenanthrylene 4430-29-9, Isoviolanthrene  
 4552-79-8 5385-22-8, Dibenzo[b,j]fluoranthene 5385-75-1,  
 Dibenz[a,e]aceanthrylene 5821-51-2, Corannulene 5834-20-8,  
 3-Phenyldibenzofuran 5869-17-0, Anthra[2,3-a]coronene 5869-30-7,  
 Dibenzo[b,ghi]perylene 5869-31-8, Benzo[uv]naphtho[2,1,8,7-  
 defg]pentacene 6208-20-4, Benzo[cd]naphtho[3,2,1,8-pqra]perylene  
 6232-48-0, Acephenanthrene 6596-37-8, Dibenzo[a,ghi]perylene  
 6596-38-9, Naphtho[5,4,3-abc]coronene 7689-57-8,  
 Benzo[a]pentaphene 11057-45-7, Benzoperylene 11057-45-7D,  
 Benzoperylene, derivs. 11068-27-2, Binaphthyl 13109-47-2,  
 Dibenzo[c,m]picene 13227-55-9, Dibenzo[a,j]difluoreno[2,1,9-  
 cde:2',1',9'-lmn]perylene 13354-54-6, Dibenzo[b,tuv]naphtho[2,1-  
 m]picene 13978-85-3, Bis(8-hydroxyquinolinato)zinc 14147-38-7,  
 Dibenzo[de,st]pentacene 14258-76-5, Benzo[st]naphtho[2,1,8,7-  
 defg]pentacene 14406-92-9 14514-42-2, Tris(8-  
 hydroxyquinolinato)indium 14642-34-3, Tris(8-  
 hydroxyquinolinato)gallium 14752-00-2, Tris(4-methyl-8-  
 hydroxyquinolinato)aluminum 14855-54-0 15209-78-6,  
 Dicyclopenta[a,c]naphthacene 15956-38-4, Tris(8-  
 hydroxyquinolinato)scandium 16683-64-0, Cyclopenta[de]naphthacene

16683-65-1, Cyclopenta[de]pentacene 16683-71-9,  
 Indeno[7,1-ab]naphthacene 16842-52-7 16914-68-4, Dinaphtho[2,1-c  
 1',2'-g]phenanthrene 17509-71-6, Isotruxene 18417-86-2,  
 Indeno[1,7a-a]phenanthrene 18429-26-0, Benzo[a]naphth[1,2-  
 h]anthracene 19301-88-3, Naphtho[2,1,8-fgh]pentaphene  
 20495-12-9, Naphtho[2,1-c:7,8-c']diphenanthrene 20495-14-1,  
 Diphenanthro[3,4-c:4',3'-g]phenanthrene 20495-15-2,  
 Dinaphth[1,2-a:1',2'-h]anthracene 22176-87-0, Anthra[2,1,9,8-  
 stuva]benzo[op]naphtho[2,1,8,7-hijk]pentacene 22815-17-4,  
 2,3,4-Triphenyl-9,9'-spirobifluorene 22815-21-0,  
 4'-Phenylspiro[fluorene-9,6'-[6H]indeno[1,2-j]fluoranthene]  
 23102-67-2  
 RL: DEV (Device component use); USES (Uses)  
 (organic light-emitting diode devices  
 using luminescent mixts.)

IT 23992-32-7, 4H-Cyclopenta[def]triphenylene 24754-03-8,  
 Fluorantheno[8,9-b]triphenylene 24930-41-4, Naphth[2,1,8-  
 mna]acridine 24969-55-9, 11,11'-Spirobi[11H-benzo[b]fluorene]  
 24976-60-1, as-Indaceno[2,3-a]phenanthrene 25732-74-5,  
 3,4-Dihydrocyclopenta[cd]pyrene 26140-60-3, Terphenyl 26979-27-1  
 27070-49-1, 1,2,3-Triazole 27208-37-3, Acepyrene 27706-08-7,  
 Benzo[de]cyclopent[b]anthracene 27798-46-5, Benzo[c]naphtho[2,1-  
 p]chrysene 30777-18-5, Benzo[a]fluorene 30909-04-7,  
 Acenaphtho[1,2-k]cyclopenta[cd]fluoranthene 31124-69-3,  
 Phenanthro[3,4-c]chrysene 31125-12-9, Benzo[ghi]naphtho[1,2-  
 b]perylene 31540-94-0, Benzo[s]picene 31541-02-3,  
 Benzo[h]naphtho[1,2,3,4-rst]pentaphene 31541-07-8,  
 Anthra[1,2,3,4-rst]pentaphene 32881-40-6, Benz[de]indeno[2,1-  
 b]anthracene 34814-80-7D, derivs. 35202-46-1,  
 3,3'-Biisoquinoline 36280-81-6, Tetrabenzo[a,d,j,m]coronene  
 36280-81-6D, Tetrabenzo[a,d,j,m]coronene, derivs. 36474-85-8,  
 Dinaphtho[1,2,3-fg:1',2',3'-qr]pentacene 37736-09-7,  
 1,3,2-Dioxazole 40563-35-7, Dibenz[e,l  
 ]acephenanthrylene 41132-64-3, Diphenaleno[9',1',2':3,4,5:9'',1'',  
 2'':9,10,11]coroneno[1,2-c:7,8-c']difuran 41163-25-1,  
 Circobiphenyl 42126-84-1, 1H-Benzo[cd]fluoranthene 42128-36-9,  
 2,3-(o-Phenylene)pyrene 42315-22-0, 1H-Cyclopenta[a]pyrene  
 42850-69-1, Dibenzo[c,l]chrysene 42851-11-6, Phenanthro[4,3-  
 b]chrysene 51473-13-3, Dibenzo[f,h]quinazoline 51958-76-0,  
 Benzo[rst]phenaleno[1,2,3-de]pentaphene 52191-69-2,  
 2,4'-Biquinoline 52879-10-4, Benzo[rst]naphtho[8,1,2-  
 cde]pentaphene 53086-28-5, Dinaphtho[8,1,2-abc:2',1',8'-  
 klm]coronene 53156-62-0, Benzo[b]naphtho[1,2,3,4-pqr]perylene  
 53156-66-4, Dibenzo[c,g]chrysene 53156-67-5, Dibenzo[b,g]chrysene  
 54961-30-7, Tribenzo[a,hi,mn]naphthacene 56181-09-0,  
 Benzo[rst]dinaphtho[8,1,2-cde:2',1',8'-klm]pentaphene 56663-32-2,  
 1,1'-Bicoronene 56832-73-6, Benzofluoranthene 57387-21-0  
 57789-81-8, Dibenzo[a,ghi]naphtho[2,1,8-cde]perylene 58029-37-1,  
 Naphtho[2,3-c]chrysene 58029-38-2, Dibenzo[b,l]chrysene  
 58029-39-3, Naphtho[1,2-a]naphthacene 58029-40-6,  
 Phenanthro[3,4-a]anthracene 58029-41-7, Benzo[a]naphth[2,1-  
 j]anthracene 58029-42-8, Dibenzo[b,p]chrysene 58029-43-9,  
 Naphtho[2,1-b]chrysene 58029-44-0, Naphtho[2,1-c]chrysene  
 58029-45-1, Benzo[a]picene 58029-46-2, Naphtho[1,2-c]chrysene  
 58029-47-3, Benzo[f]picene 58052-99-6, Dinaphtho[8,1,2-  
 lmn:2',1',8'-gra]naphthacene 58615-36-4, Dibenzopyrene  
 58615-36-4D, Dibenzopyrene, derivs. 59004-71-6,  
 3H-Indeno[2,1,7-cde]pyrene 59004-72-7, 4H-  
 Benzo[def]cyclopenta[mno]chrysene 60021-28-5, 8,8'-Biquinoline  
 60032-75-9, Tribenzo[b,def,p]chrysene 61537-21-1, Sexiphenyl  
 62243-32-7, Phenanthro[2,1-b]chrysene 63218-07-5,  
 Dibenzo[c,i]cyclopenta[a]fluorene 64503-02-2, 1H-  
 Benzo[ghi]cyclopenta[pqr]perylene 65181-78-4, N,N'-Bis(3-  
 methylphenyl)-N,N'-diphenylbenzidine 65256-40-8, Dibenzoperylene  
 65256-40-8D, Dibenzoperylene, derivs. 67017-06-5, Dibenzocoronene  
 67017-06-5D, Dibenzocoronene, derivs. 67017-07-6, Tribenzocoronene

67017-07-6D, Tribenzocoronene, derivs. 67665-45-6,  
 9,9'-Spirobi(9H-fluorene)-2,2'-diamine 67665-48-9,  
 9,9'-Spirobi(9H-fluorene)-2,2'-dicarbonitrile 68171-26-6,  
 Dinaphth[1,2-a:2',1'-j]anthracene 70346-75-7,  
 Dibenzo[a,jk]phenanthro[8,9,10,1,2-cdefgh]pyranthrene 72088-81-4,  
 Cyclopent[b]indeno[4,5-g]phenanthrene 72088-82-5,  
 Cyclopent[b]indeno[5,6-g]phenanthrene 72986-34-6,  
 Benzo[def]pyranthrene 73467-76-2, Benzopyrene 73467-76-2D,  
 Benzopyrene, derivs. 74335-56-1, Peri-Pentacenopentacene  
 75449-86-4, Benzo[g]naphtho[8,1,2-abc]coronene 75449-87-5,  
 Phenanthro[1,10,9-abc]coronene 75449-88-6, Benz[a]ovalene  
 75449-89-7, Benz[d]ovalene 75449-90-0, Pyreno[10,1,2-abc]coronene  
 75449-91-1, Acenaphtho[1,2,3-cde]pyrene 75449-92-2,  
 Phenanthro[5,4,3,2-abcde]perylene 75449-94-4,  
 Benzo[lmn]naphtho[2,1,8-qla]perylene 75449-96-6,  
 Dibenz[e,ghi]indeno[1,2,3,4-pqra]perylene 75449-98-8,  
 Benzo[ij]dinaphtho[2,1,8,7-defg:7',8',1',2',3'-pqrst]pentaphene  
 75449-99-9, Benzo(m)naphtho[8,1,2-abc]coronene 75450-00-9,  
 Benzo(p)naphtho[8,1,2-abc]coronene 75459-00-6,  
 Benzo[j]naphtho[8,1,2-abc]coronene 75459-01-7,  
 Phenanthro[10,1,2-abc]coronene 75459-02-8, Dinaphtho[8,1,2-  
 abc:8',1',2'-ghi]coronene 75459-03-9 75459-04-0,  
 Pyreno[1,10,9-abc]coronene 75459-05-1, Benzo[qr]naphtho[3,2,1,8-  
 defg]chrysene 75459-08-4, Dibenzo[a,cd]naphtho[8,1,2,3-  
 fghi]perylene 75459-09-5, Dibenzo[ij,rst]naphtho[2,1,8,7-  
 defg]pentaphene 75519-75-4, Naphth[2,1-a]aceanthrylene  
 75769-05-0, Dibenzo[de,gh][1,10]phenanthroline 76727-41-8,  
 Benz[5,6]indeno[2,1-a]phenalene 76748-63-5, Circumanthracene  
 76748-64-6, Diphenaleno[4,3,2,1,9-hijklm:4',3',2',1',9'-  
 tuvwxa]rubicene 76759-99-4, Dibenzo[mn,qr]fluoreno[2,1,9,8,7-  
 defghi]naphthacene 77147-27-4, Tribenzo[a,jk,v]phenanthro[8,9,10,1  
 ,2-cdefgh]pyranthrene 80277-95-8, Phenanthro[9,10-b]chrysene  
 80455-52-3, Cyclopentaphenanthrene 81965-54-0,  
 Dibenzo[hi,op]dinaphtho[8,1,2-cde:2',1',8'-uva]pentacene  
 82453-25-6, 3,3'-Bicinnoline 82628-46-4, Dibenzo[b,m]picene  
 83786-06-5, Dibenzo[de,kl]pentaphene 84030-79-5,  
 Dibenzo[a,k]fluoranthene 85903-97-5, Benz[de]isoquino[1,8-  
 gh]quinoline 90207-46-8, Dicyclopenta[a,j]coronene 91374-35-5,  
 Naphth[2,1,8-uva]ovalene 92411-20-6, Tribenzo[a,cd,lm]perylene  
 92586-98-6, Anthra[2,1,9,8-opqra]naphthacene 93122-98-6,  
 Dibenzo[j,lm]naphtho[1,8-ab]perylene 93289-29-3, Benzo[a]heptacene  
 95690-49-6, Benz[l]acephenanthrylene 96204-29-4,  
 Dibenzo[o,rst]dinaphtho[2,1-a:8',1',2'-cde]pentaphene 96204-30-7,  
 Dibenzo[a,rst]benzo[5,6]phenanthro[9,10,1-klm]pentaphene  
 96915-18-3, Indeno[5,6,7,1-pqra]perylene 96915-19-4,  
 Benz[mno]indeno[5,6,7,1-defg]chrysene 96915-20-7,  
 Dibenzo[def,mno]cyclopenta[hi]chrysene 96915-21-8,  
 Benz[mno]indeno[1,7,6,5-cdef]chrysene 97083-12-0  
 97269-75-5D, Tribenzo[fgh,pqr,zalbl]trinaphthylene, derivs.  
 97938-05-1, Benzo[lm]naphtho[1,8-ab]perylene 98570-53-7,  
 Dicoronylene 98570-54-8, Cyclopenta[1,2-a:3,4,5-b'c']dicoronene  
 100684-90-0, Benzo[pqr]naphtho[2,1,8-def]picene 101686-49-1,  
 Indeno[1,2,3-cd]perylene 102634-38-8, Benz[b]indeno[2,1-h]fluorene  
 102634-40-2, Fluoreno[3,2-b]fluorene 105442-96-4,  
 Dibenzo[def,i]naphtho[8,1,2-vwx]pyranthrene 105786-27-4,  
 Benzo[ij]naphtho[2,1,8,7-defg]pentaphene 106404-28-8,  
 Naphth[1',2':5,6]indeno[1,2,3-cd]pyrene 106404-29-9,  
 Naphth[2',1':4,5]indeno[1,2,3-cd]pyrene 108189-73-7D, derivs.  
 108650-10-8, Tribenzo[c,g,mno]chrysene 109278-08-2,  
 Benzo[lm]phenanthro[5,4,3-abcd]perylene 109278-09-3,  
 Dibenzo[cd,n]naphtho[3,2,1,8-pqra]perylene 109278-10-6,  
 Tetrabenzo[a,cd,f,lm]perylene 109587-09-9, 1H-Cyclopenta[e]pyrene  
 109587-16-8, Tetrabenzo[a,c,hi,mn]naphthacene 109587-17-9,  
 Tetrabenzo[de,jk,op,uv]pentacene 110789-63-4,  
 Dibenzo[fgh,pqr]trinaphthylene 111189-32-3, Indeno[1,2,3-  
 hi]chrysene 111189-33-4, Benz[def]indeno[1,2,3-hi]chrysene

111189-34-5, Benz[def]indeno[1,2,3-qr]chrysene 111381-82-9,  
 Phenanthro[2,1-f]picene 111728-58-6, Benzo[pqr]naphtho[8,1,2-  
 cde]picene 112498-94-9, Benzo[a]naphtho[1,2-j]naphthacene  
 112498-95-0, Phenanthro[3,4-b]triphenylene 112498-96-1,  
 Benzo[a]naphtho[1,2-l]naphthacene 112498-97-2,  
 Benzo[a]naphtho[2,1-j]naphthacene 113779-16-1,  
 Benzo[l]cyclopenta[cd]pyrene 115697-03-5D,  
 Pentabenz[fg,ij,o,q,vwx]hexaphene, derivs. 115697-04-6D, derivs.  
 115697-10-4 115697-12-6, Benzo[m]diphenanthro[1,10,9-abc:1',10',9'-  
 ghi]coronene 115697-46-6D, derivs. 115712-69-1D, derivs.  
 115747-36-9, Dibenz[a,f]picene 115747-37-0,  
 Dibenz[a,c]pentaphene 115747-38-1, Dibenz[a,h]pentaphene  
 115747-39-2, Dibenz[c,h]pentaphene 115747-40-5,  
 Phenanthro[2,3-g]chrysene 115747-41-6, Phenanthro[3,2-g]chrysene  
 115747-42-7, Benzo[l]naphtho[1,2-b]chrysene 115747-43-8,  
 Naphtho[2,1-c]picene 115747-44-9, Benzo[c]naphtho[2,3-l]chrysene  
 115747-45-0, Benzo[a]naphtho[1,2-c]naphthacene 115747-46-1,  
 Tribenzo[b,g,k]chrysene 115747-47-2, Tribenzo[b,g,l]chrysene  
 115747-48-3, Dibenz[b,j]picene 115747-49-4, Naphtho[1,2-f]picene  
 115747-50-7, Dibenz[c,s]picene 115747-51-8, Naphtho[2,1-a]picene  
 115747-52-9, Benzo[c]naphtho[1,2-l]chrysene 115747-53-0,  
 Benzo[l]naphtho[2,1-b]chrysene 115747-54-1, Dibenz[a,j]picene  
 115747-55-2, Benzo(p)naphtho[1,2-b]chrysene 115747-56-3,  
 Benzo(p)naphtho[2,1-b]chrysene 115747-57-4, Benzo[g]naphtho[2,1-  
 b]chrysene 115747-58-5, Naphtho[2,3-a]picene 115747-59-6,  
 Anthra[1,2-a]benz[j]anthracene 115747-60-9, Dibenz[a,o]pentaphene  
 115747-61-0, Phenanthro[2,3-c]chrysene 115747-62-1,  
 Dibenz[a,n]picene 115747-63-2, Phenanthro[1,2-a]naphthacene  
 115747-64-3, Naphtho[1,2-h]pentaphene 115747-65-4,  
 Benzo[b]naphtho[2,3-g]chrysene 115747-66-5, Naphtho[2,3-s]picene  
 115747-67-6, Benzo[b]naphtho[2,1-p]chrysene 115747-68-7,  
 Dibenz[b,f]picene 115747-69-8, Benzo[b]naphtho[2,1-g]chrysene  
 115747-70-1, Dibenz[a,c]picene 115747-71-2, Benzo[b]naphtho[2,3-  
 l]chrysene 115747-72-3, Dibenz[o,f,s]picene 115747-73-4,  
 Naphtho[2,3-a]pentaphene 115747-74-5, Benzo[q]hexaphene  
 115747-75-6, Naphtho[2,3-b]picene 115747-76-7, Benzo(o)hexaphene  
 115747-77-8, Tribenzo[b,g,p]chrysene 115747-78-9,  
 Anthra[1,2-a]naphthacene 115747-79-0, Benzo[a]hexaphene  
 115747-80-3, Naphtho[1,2-c]pentaphene 115747-81-4,  
 Naphtho[2,1-b]picene 115747-82-5, Naphtho[1,2-b]picene  
 115747-83-6, Dibenz[a,m]pentaphene 115747-84-7,  
 Phenanthro[3,4-b]chrysene 115747-85-8, Naphtho[1,2-a]pentaphene  
 115747-86-9, Naphtho[2,1-a]pentaphene 115747-87-0,  
 Benzo[a]naphtho[2,1-l]naphthacene 115747-88-1, Dibenz[b,s]picene  
 115747-89-2, Phenanthro[3,4-a]naphthacene 115747-90-5,  
 Benzo[b]naphtho[1,2-l]chrysene 115747-91-6, Benzo[b]naphtho[2,1-  
 k]chrysene 115747-92-7, Benzo[c]hexaphene 115747-93-8,  
 Dibenz[a,o]picene 115791-73-6, Phenanthro[9,10-a]naphthacene  
 115791-74-7, Naphtho[1,2-a]pentacene 115791-75-8,  
 Naphtho[2,1-c]pentaphene 117440-50-3, Tribenzo[a,f,j]perylene  
 117726-80-4, Dibenz[j,lm]phenanthro[5,4,3-abcd]perylene  
 117726-81-5, Dibenz[rs,vwx]naphtho[2,1,8,7-klmn]hexaphene  
 117726-82-6

RL: DEV (Device component use); USES (Uses)  
 (organic light-emitting diode devices  
 using luminescent mixts.)

IT 117726-83-7, Benz[4,10]anthra[1,9,8-abcd]coronene 117726-84-8,  
 Dibenz[fg,ij]naphtho[2,1,8-uva]pentaphene 117740-28-0,  
 Benzo[rs]pyreno[1,10,9-cde]pentaphene 119000-35-0,  
 Pyreno[2,1-b]picene 119000-37-2, Chryseno[2,1-b]picene  
 119000-39-4, Dibenz[q,vwx]hexaphene 119000-41-8,  
 Benzo[c]naphtho[2,1-m]pentaphene 119000-43-0, Dinaphtho[2,1-  
 a:2',1'-j]naphthacene 119123-34-1, Benzo[6,7]phenanthro[4,3-  
 b]chrysene 119123-35-2, Benzo[tuv]naphtho[2,1-b]picene  
 119123-36-3, Naphtho[7,8,1,2,3-tuvwx]hexaphene 120835-39-4,  
 Naphtho[2,1,8-def]picene 120835-40-7, Dibenz[a,pqr]picene

120835-41-8, Naphtho[1,2-b]perylene 120835-43-0,  
Naphtho[2,1-b]perylene 120835-44-1, Dibenzo[c,pqr]picene  
120835-45-2, Benzo[de]naphtho[3,2,1-mn]naphthacene 120835-46-3,  
Dibenzo[de,ij]pentaphene 120835-48-5, Dibenzo[de,uv]pentaphene  
120835-49-6, Benzo[mno]naphtho[1,2-c]chrysene 120835-50-9,  
Naphtho[8,1,2-cde]pentaphene 120835-51-0, Dibenzo[a,rst]pentaphene  
120835-52-1, Dibenzo[c,rst]pentaphene 120835-53-2,  
Dibenzo[de,qr]pentacene 120835-54-3, Phenanthro[9,10,1-  
qra]naphthacene 120835-55-4, Naphtho[7,8,1,2,3-pqrst]pentaphene  
120835-56-5, Benzo[pqr]naphtho[2,1-b]perylene 120835-57-6,  
Benzo[pqr]naphtho[1,2-b]perylene 120835-58-7, Phenanthro[1,2,3,4-  
ghi]perylene 120835-59-8, Benzo[ghi]naphtho[2,1-a]perylene  
120835-60-1, Tribenzo[a,e,ghi]perylene 120835-61-2,  
Dibenzo[b,qr]naphtho[3,2,1,8-defg]chrysene 120835-62-3,  
Tribenzo[b,e,ghi]perylene 120835-63-4, Benzo[ghi]naphtho[2,1-  
b]perylene 120835-64-5, Benzo[rst]naphtho[2,1,8-fgh]pentaphene  
120835-65-6, Tribenzo[de,ij,rst]pentaphene 120835-66-7,  
Benzo[a]naphtho[2,1,8-cde]perylene 120835-67-8,  
Benzo[qr]naphtho[2,1,8,7-defg]pentacene 120835-69-0,  
Benzo[h]naphtho[7,8,1,2,3-pqrst]pentaphene 120835-70-3,  
Benzo[kl]naphtho[2,1,8,7-defg]pentaphene 120835-71-4,  
Benzo[a]naphtho[2,1,8-lmn]perylene 120835-72-5,  
Dibenzo[c,hi]naphtho[3,2,1,8-mnop]chrysene 120835-73-6,  
Benzo[a]naphtho[8,1,2-klm]perylene 120835-74-7,  
Benzo[de]naphtho[8,1,2,3-stuv]picene 120835-75-8,  
Tribenzo[a,ghi,k]perylene 120835-76-9, Benzo[a]naphtho[1,2,3,4-  
ghi]perylene 120835-77-0, Anthra[2,1,9,8-defgh]pentaphene  
120835-78-1, Benzo[a]naphtho[7,8,1,2,3-pqrst]pentaphene  
120835-79-2, Phenanthro[9,10,1,2,3-pqrst]pentaphene 120835-80-5,  
Benzo[c]naphtho[7,8,1,2,3-pqrst]pentaphene 120835-81-6,  
Phenanthro[2,3,4,5-tuvab]picene 120835-82-7, Anthra[9,9,1,2-  
cdefg]benzo[a]naphthacene 120835-83-8, Benzo[de]naphtho[2,1,8,7-  
qrst]pentacene 120835-85-0, Naphtho[3,2,1,8,7-vwxyz]hexaphene  
120835-86-1, Benzo[uv]naphtho[2,1,8,7-defg]pentaphene 120835-87-2,  
Anthra[8,9,1,2-lmnop]benzo[a]naphthacene 120835-88-3,  
Anthra[2,1,9,8-stuva]pentacene 120835-89-4, Dibenzo[a,d]coronene  
120835-90-7, Naphtho[1,2-a]coronene 120835-91-8,  
Dibenzo[fg,ij]naphtho[7,8,1,2,3-pqrst]pentaphene 120835-92-9,  
Dibenzo[de,ij]naphtho[3,2,1,8,7-rstuv]pentaphene 120835-93-0,  
Dinaphtho[2,1,8-fgh:3',2',1',8',7'-rstuv]pentaphene 120835-94-1,  
Dinaphtho[2,1,8,7-defg:2',1',8',7'-qrst]pentacene 120835-95-2,  
Dinaphtho[1,8-ab:8',1',2',3'-fghi]perylene 120835-96-3  
120835-97-4, Dinaphtho[8,1,2-cde:7',8',1',2',3'-pqrst]pentaphene  
120835-98-5, Dinaphtho[2,1,8-fgh:7',8',1',2',3'-pqrst]pentaphene  
120835-99-6, Benzo[e]phenanthro[1,10,9,8-opqra]perylene  
120836-00-2, Dibenzo[de,ij]naphtho[7,8,1,2,3-pqrst]pentaphene  
120836-01-3, Anthra[2,1,9,8-defgh]benzo[rst]pentaphene  
120836-02-4, Dibenzo[cd,k]naphtho[3,2,1,8-pqra]perylene  
120836-03-5, Dibenzo[a,ghi]naphtho[8,1,2-klm]perylene 120836-04-6,  
Dibenzo[a,ghi]naphtho[2,1,8-lmn]perylene 120836-05-7,  
Dibenzo[ghi,n]naphtho[8,1,2-bcd]perylene 120836-06-8,  
Benzo[e]phenanthro[2,3,4,5-pqrab]perylene 120836-08-0,  
Anthra[2,1,9,8,7-defghi]benzo[st]pentacene 120836-11-5,  
Pyreno[5,4,3,2,1-pqrst]pentaphene 120836-12-6 120836-13-7,  
Anthra[2,1,9,8,7-defghi]benzo[uv]pentacene 120836-14-8,  
Anthra[7,8,9,1,2,3-rstuvwx]hexaphene 120836-16-0,  
Anthra[3,2,1,9,8-rstuv]benzo[ij]pentaphene 120836-17-1  
120836-18-2, Anthra[3,2,1,9-pqra]benzo[cd]perylene 120864-21-3,  
Anthra[9,1,2-bcd]perylene 120864-22-4,  
Dibenzo[kl,rst]naphtho[2,1,8,7-defg]pentaphene 120864-23-5,  
Dibenzo[ghi,lm]naphtho[1,8-ab]perylene 120864-24-6,  
Anthra[2,1,9,8,7-defghi]benzo[op]pentacene 121159-18-0,  
Naphtho[2,1,8-uva]pentaphene 122648-99-1 122677-68-3,  
Dinaphtho[8,1,2-abc:2',1',8'-efg]coronene 122961-15-3,  
Benzo[j]benzo[2,1-a:3,4-a']dianthracene 123178-01-8D, derivs.  
123178-24-5D, derivs. 123795-83-5, Dinaphtho[2,1,8-jkl:2',1',8'-



uva]pentacene 123847-85-8 125229-51-8 126762-84-3,  
 Dinaphtho[2,1-a:1',2'-l]naphthacene 126762-86-5,  
 Dinaphtho[2,1,8,7-hijk:2',1',8',7'-wxyz]heptacene 127543-08-2,  
 1H-Tribenzo[fg,jk,uv]hexacene 128345-67-5,  
 Tribenzo[a,hi,kl]coronene 128345-68-6, Tribenzo[a,ef,no]coronene  
 128345-69-7, Benzo[bc]naphtho[3,2,1-ef]coronene 128345-70-0,  
 Tribenzo[a,ef,hi]coronene 128345-71-1, Naphtho[3,2,1,8,7-  
 defgh]pyranthrene 128345-72-2, Benzo[bc]naphtho[1,2,3-ef]coronene  
 128345-73-3, Anthra[9,1,2-abc]coronene 128345-74-4,  
 Dinaphtho[8,1,2-abc:2',1',8'-hij]coronene 128345-75-5,  
 Dibenzo[kl,no]naphtho[8,1,2-abc]coronene 128345-76-6,  
 Benzo[ef]phenaleno[9,1,2-abc]coronene 128345-77-7,  
 Dibenzo[hi,kl]naphtho[8,1,2-abc]coronene 128345-78-8,  
 Anthra[1,9,8-abcd]benzo[hi]coronene 128345-79-9,  
 Benzo[QRS]naphtho[3,2,1,8,7-defgh]pyranthrene 128345-80-2,  
 Tetrabenzo[bc,ef,kl,no]coronene 128366-79-0,  
 Tetrabenzo[bc,ef,hi,kl]coronene 128395-02-8, Dinaphtho[8,1,2-  
 abc:2',1',8'-nop]coronene 128395-03-9, Dibenzo[ef,hi]naphtho[8,1,2-  
 abc]coronene 128515-16-2, Dibenzo[ef,no]naphtho[8,1,2-abc]coronene  
 128720-98-9, Dinaphtho[1,2,3-fg:3',2',1'-qr]pentacene 128720-99-0,  
 Dinaphtho[3,2,1-fg:1',2',3'-ij]pentaphene 128721-00-6,  
 Dinaphtho[3,2,1-fg:3',2',1'-qr]pentacene 128721-01-7,  
 Tetrabenzo[a,e,j,o]perylene 128721-02-8, Dinaphtho[1,8-bc:1',8'-  
 mn]picene 128746-59-8, Tetrabenzo[a,f,k,n]perylene 131238-65-8,  
 Fluoreno[4,3-c]fluorene 133156-50-0, Dibenzo[f,j]naphtho[1,2,3,4-  
 pqr]picene 133156-51-1, Dibenzo[fg,ij]benzo[9,10]pyreno[5,4,3,2,1-  
 pqrst]pentaphene 133156-52-2, Dibenzo[fg,ij]triphenylene[1,2,3,4-  
 rst]pentaphene 133979-16-5, Dinaphtho[2,3-c:2',3'-m]pentaphene  
 136276-45-4, Fluoreno[9,1-ab]triphenylene 136739-74-7,  
 137570-57-1, Benzo[mno]naphtho[2,1-c]chrysene 137570-58-2,  
 Phenanthro[1,2,3,4-def]chrysene 137570-59-3,  
 Benzo[fg]naphtho[1,2,3-op]naphthacene 137570-60-6,  
 Benzo[c]naphtho[8,1,2-ghi]chrysene 137593-96-5,  
 Benzo[b]naphtho[8,1,2-pqr]chrysene 137593-97-6,  
 Dibenzo[pq,uv]pentaphene 141046-06-2,  
 13H-Dibenz[bc,l]aceanthrylene 141046-07-3, 4H-  
 Benzo[b]cyclopenta[mno]chrysene 143214-92-0, Naphthopyrene  
 143214-92-0D, Naphthopyrene, derivs. 143255-65-6,  
 4H-Benzo[c]cyclopenta[mno]chrysene 143255-67-8,  
 13H-Indeno[2,1,7-qr]naphthacene 143255-68-9, 4H-  
 Benzo[b]cyclopenta[jkl]triphenylene 148292-86-8,  
 Indeno[1,7-ab]chrysene 148896-39-3, Bis[10-  
 hydroxybenzo[h]quinolinato]beryllium 149054-17-1,  
 13H-Cyclopenta[rst]pentaphene 149054-18-2, 5H-  
 Benzo[b]cyclopenta[def]chrysene 151841-51-9 151841-51-9D,  
 derivs. 153043-81-3, Indeno[1,7,6,5-cdef]chrysene 153043-82-4,  
 Benzo[def]cyclopenta[qr]chrysene 155121-10-1, Pentaleno[1,2-b:4,5-  
 b']dinaphthalene 158782-55-9, Tetrabenzo[fg,ij,pq,uv]pentaphene  
 171408-92-7 172285-72-2 181270-04-2, Indeno[5,6,7,1-  
 defg]chrysene 182631-29-4 186412-15-7 188882-34-0,  
 8H-Benzo(p)cyclopenta[def]chrysene 196311-56-5D, derivs.  
 200950-04-5, 7H-Indeno[1,2-a]pyrene 210487-02-8 210487-03-9  
 210487-04-0 216066-66-9 216066-70-5 218629-56-2D, derivs.  
 239127-66-3, Naphtho[2,3-f][1,10]phenanthroline 247575-24-2  
 249288-56-0 249512-71-8 274905-73-6 331856-51-0 363609-60-3  
 374592-88-8 374592-94-6 405880-13-9 405880-29-7 405881-79-0  
 405881-98-3 460347-68-6 462104-51-4 473906-55-7 474084-24-7  
 474353-08-7, 3H-1,2,3-Dioxazole 474918-41-7 478799-51-8  
 478799-69-8 497157-27-4 503307-40-2 503307-41-3 503624-47-3  
 682331-02-8 682331-03-9 682331-04-0D, Benzo[g]phenanthro[1,10,9-  
 abc]coronene, derivs. 682331-05-1D, derivs. 682331-06-2D,  
 derivs. 682334-86-7 682334-87-8

RL: DEV (Device component use); USES (Uses)

(organic light-emitting diode devices  
using luminescent mixts.)

IT 197-70-6, Benzo[b]perylene 197-74-0, Dibenzo[b,k]perylene

198-55-0, Perylene 517-51-1, 5,6,11,12-Tetraphenylnaphthacene  
 1047-16-1, Quinacridone 38215-36-0, Coumarin 6 51325-91-8, DCM  
 55035-42-2, 4-Diphenylamino)-4'-[4-(diphenylamino)styryl]stilbene  
 55035-43-3, 4-(Di-p-Tolylamino)-4'-[(di-p-tolylamino)styryl]stilbene  
 55035-47-7, 9,10-Bis[4-(di-p-tolylamino)styryl]anthracene  
 62555-95-7 62556-02-9 80663-92-9, 2,5,8,11-Tetra-tert-  
 butylperylene 96323-47-6 119564-27-1 120369-88-2 127374-49-6  
 155306-71-1, Coumarin 545T 155306-72-2, Coumarin 525T  
 200052-70-6, DCJT 221455-80-7, Diphenylquinacridone 249288-60-6  
 369612-04-4, 2,8-Di-tert-butylperylene 478799-44-9 478799-49-4,  
 5,6,13,14-Tetraphenylpentacene 500800-87-3 682331-01-7  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)

(organic light-emitting diode devices  
 using luminescent mixts.)

L105 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:673851 Document No. 139:204846 Anthracene compounds, their  
 organic **EL device** materials, and their  
**EL devices** having high emission efficiency, long  
 service life, and good heat resistance. Hosokawa, Chishio;  
 Funabashi, Masakazu; Ikeda, Shuji; Yamamoto, Hiroshi (Idemitsu Kosan  
 Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003238534 A2  
 20030827, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 2002-45705 20020222.

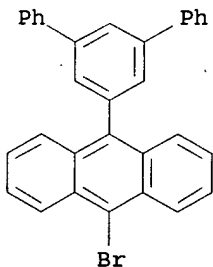
IT 474688-74-9P 585533-61-5P 585533-63-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)

(anthracene compds. for organic **EL device** having  
 high emission efficiency, long service life, and good heat  
 resistance)

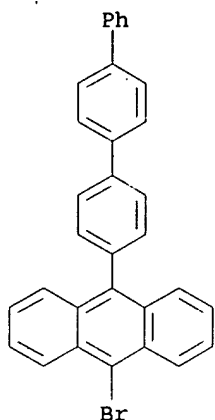
RN 474688-74-9 HCAPLUS

CN Anthracene, 9-bromo-10-[1,1':3',1''-terphenyl]-5'-yl- (9CI) (CA  
 INDEX NAME)

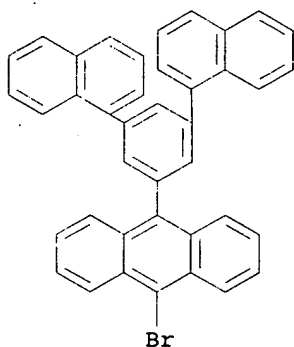


RN 585533-61-5 HCAPLUS

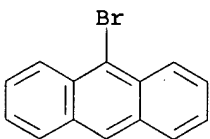
CN Anthracene, 9-bromo-10-[1,1':4',1''-terphenyl]-4-yl- (9CI) (CA  
 INDEX NAME)



RN 585533-63-7 HCAPLUS  
 CN Anthracene, 9-bromo-10-(3,5-di-1-naphthalenylphenyl)- (9CI) (CA INDEX NAME)



IT 1564-64-3, 9-Bromoanthracene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (anthracene compds. for organic **EL device** having  
 high emission efficiency, long service life, and good heat  
 resistance)  
 RN 1564-64-3 HCAPLUS  
 CN Anthracene, 9-bromo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM C07D209-86  
 ICS C07D223-22; C07D241-46; C07D471-04; C09K011-06; H05B033-14;  
 H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 25.  
 ST anthracene compd org **electroluminescent device**  
 IT Alkali metal chalcogenides  
 Alkali metal halides, uses

- Alkaline earth chalcogenides  
Alkaline earth halides  
RL: DEV (Device component use); USES (Uses)  
(dielec., in **electron-transporting** layer;  
anthracene compds. for organic **EL device** having  
high emission efficiency, long service life, and good heat  
resistance)
- IT **Electroluminescent devices**  
(organic; anthracene compds. for organic **EL device**  
having high emission efficiency, long service life, and good heat  
resistance)
- IT 585533-53-5P 585533-54-6P 585533-55-7P 585533-56-8P  
585533-57-9P 585533-58-0P 585533-59-1P 585533-64-8P  
RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)  
(anthracene compds. for organic **EL device** having  
high emission efficiency, long service life, and good heat  
resistance)
- IT 474688-74-9P 478495-51-1P 585533-60-4P  
585533-61-5P 585533-62-6P 585533-63-7P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(anthracene compds. for organic **EL device** having  
high emission efficiency, long service life, and good heat  
resistance)
- IT 86-74-8, Carbazole 256-96-2, Iminostilbene 1564-64-3,  
9-Bromoanthracene 1762-84-1, 4-Bromo-p-terphenyl 103068-20-8  
173678-07-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(anthracene compds. for organic **EL device** having  
high emission efficiency, long service life, and good heat  
resistance)
- IT 2085-33-8, Tris(8-quinolinol) aluminum  
RL: DEV (Device component use); USES (Uses)  
(**electron-injection** layer; anthracene compds.  
for organic **EL device** having high emission  
efficiency, long service life, and good heat resistance)
- IT 209980-53-0  
RL: DEV (Device component use); USES (Uses)  
(**hole-injection** layer; anthracene compds. for  
organic **EL device** having high emission  
efficiency, long service life, and good heat resistance)
- IT 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylaminol]biphenyl  
RL: DEV (Device component use); USES (Uses)  
(**hole-transporting** layer; anthracene compds.  
for organic **EL device** having high emission  
efficiency, long service life, and good heat resistance)
- IT 7440-09-7, Potassium, uses 7440-17-7, Rubidium, uses 7440-23-5,  
Sodium, uses 7440-24-6, Strontium, uses 7440-39-3, Barium, uses  
7440-46-2, Cesium, uses 7440-70-2, Calcium, uses  
RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)  
(reducing dopant, in **electron-transporting**  
layer; anthracene compds. for organic **EL device**  
having high emission efficiency, long service life, and good heat  
resistance)
- IT 7429-90-5D, Aluminum, oxide, nitride, oxynitride 7439-93-2D,  
Lithium, oxide, nitride, oxynitride 7439-95-4D, Magnesium, oxide,  
nitride, oxynitride 7440-21-3D, Silicon, oxide, nitride,  
oxynitride 7440-23-5D, Sodium, oxide, nitride, oxynitride  
7440-24-6D, Strontium, oxide, nitride, oxynitride 7440-25-7D,  
Tantalum, oxide, nitride, oxynitride 7440-36-0D, Antimony, oxide,  
nitride, oxynitride 7440-39-3D, Barium, oxide, nitride, oxynitride  
7440-43-9D, Cadmium, oxide, nitride, oxynitride 7440-55-3D,  
Gallium, oxide, nitride, oxynitride 7440-64-4D, Ytterbium, oxide,  
nitride, oxynitride 7440-66-6D, Zinc, oxide, nitride, oxynitride

7440-70-2D, Calcium, oxide, nitride, oxynitride 7440-74-6D,  
 Indium, oxide, nitride, oxynitride  
 RL: DEV (Device component use); USES (Uses)  
 (semiconductor, in **electron-transporting**  
 layer; anthracene compds. for organic EL device  
 having high emission efficiency, long service life, and good heat  
 resistance)

L105 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN

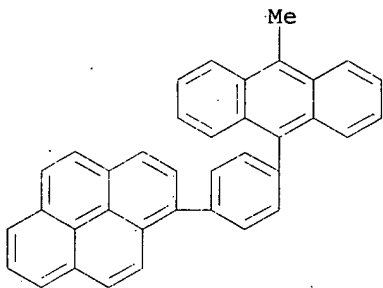
2002:867325 Document No. 137:377245 Organic **electroluminescent**  
**device** containing aromatic condensed ring compound. Suzuki,  
 Koichi; Senoo, Akihiro; Tanabe, Hiroshi (Canon Inc., Japan). Jpn.  
 Kokai Tokkyo Koho JP 2002329580 A2 20021115, 50 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 2002-36804 20020214. PRIORITY: JP  
 2001-46225 20010222.

IT 475460-78-7 475460-85-6 475461-14-4

RL: DEV (Device component use); USES (Uses)  
 (organic **electroluminescent device** containing aromatic  
 condensed ring compound as **electron-transporting**  
 or **light-emitting** or **hole/exciton-**  
**blocking layer**)

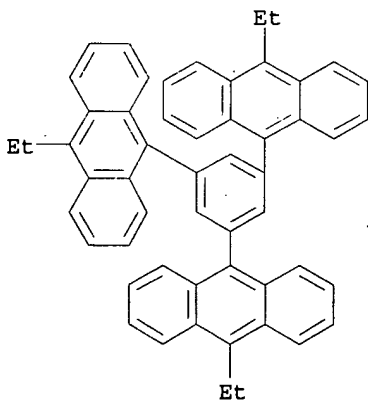
RN 475460-78-7 HCAPLUS

CN Pyrene, 1-[4-(10-methyl-9-anthracenyl)phenyl]- (9CI) (CA INDEX  
 NAME)



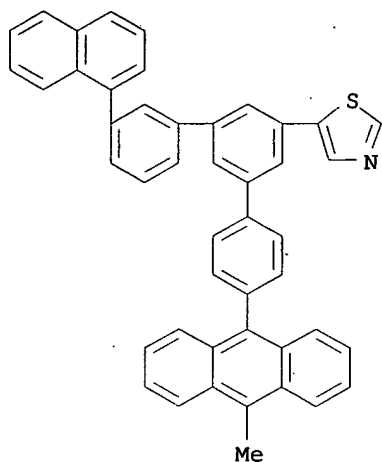
RN 475460-85-6 HCAPLUS

CN Anthracene, 9,9',9''-(1,3,5-benzenetriyl)tris[10-ethyl- (9CI) (CA  
 INDEX NAME)



RN 475461-14-4 HCAPLUS

CN Thiazole, 5-[4-(10-methyl-9-anthracenyl)-3''-(1-  
 naphthalenyl)[1,1':3',1''-terphenyl]-5'-yl]- (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
ICS C07C013-547; C09K011-06; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25

ST **electroluminescent device** arom condensed ring  
**electron transporter; light emitting layer** condensed ring compd **EL device; hole exciton blocking layer** condensed ring **EL device**

IT **Electroluminescent devices**  
(organic **electroluminescent device** containing aromatic condensed ring compound as **electron-transporting** or **light-emitting** or **hole/exciton-blocking layer**)

IT	111228-18-3	151965-47-8	349666-25-7	349666-25-7	349666-26-8
	475460-76-5	475460-77-6	<b>475460-78-7</b>	475460-79-8	
	475460-80-1	475460-81-2	475460-82-3	475460-84-5	
	<b>475460-85-6</b>	475460-86-7	475460-87-8	475460-88-9	
	475460-89-0	475460-90-3	475460-91-4	475460-92-5	475460-93-6
	475460-95-8	475460-96-9	475460-97-0	475460-98-1	475460-99-2
	475461-00-8	475461-01-9	475461-02-0	475461-03-1	475461-04-2
	475461-05-3	475461-06-4	475461-07-5	475461-08-6	475461-09-7
	475461-10-0	475461-11-1	475461-12-2	475461-13-3	
	<b>475461-14-4</b>	475461-15-5	475461-16-6	475461-17-7	
	475461-18-8	475461-19-9	475461-20-2	475461-21-3	475461-22-4
	475461-23-5	475461-24-6	475461-25-7	475461-26-8	475461-27-9
	475461-28-0	475461-29-1	475461-30-4	475461-31-5	475461-32-6
	475461-33-7	475461-34-8			

RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent device** containing aromatic condensed ring compound as **electron-transporting** or **light-emitting** or **hole/exciton-blocking layer**)

IT 441352-90-5P 475461-35-9P 475461-36-0P 475461-37-1P  
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(organic **electroluminescent device** containing aromatic condensed ring compound as **electron-transporting** or **light-emitting** or **hole/exciton-blocking layer**)

IT 626-39-1, 1,3,5-Tribromobenzene 636-28-2, 1,2,4,5-Tetrabromobenzene 333432-28-3 400607-34-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(organic **electroluminescent device** containing aromatic

condensed ring compound as electron-transporting  
or light-emitting or hole/exciton-  
blocking layer)

L105 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN

2002:658423 Document No. 137:192564 **Electroluminescent**

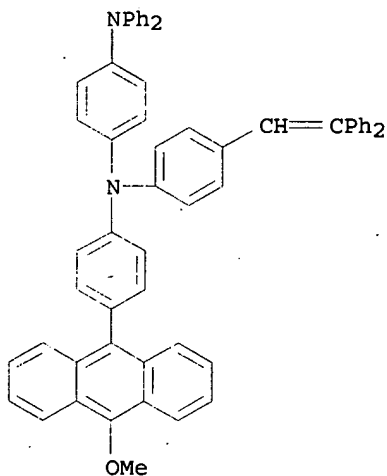
component and preparation method. Satou, Tetsuya; Matsuo, Mikiko;  
Sugiura, Hisanori; Uemura, Tsuyoshi (Matsushita Electric Industrial  
Co., Ltd., Japan). PCT Int. Appl. WO 2002067632 A1 20020829, 51 pp.  
DESIGNATED STATES: W: KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI,  
FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN:  
PIXXD2. APPLICATION: WO 2002-JP1342 20020218. PRIORITY: JP  
2001-44728 20010221.

IT 346610-48-8P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(**electroluminescent** component and preparation method)

RN 346610-48-8 HCAPLUS

CN 1,4-Benzenediamine, N-[4-(2,2-diphenylethenyl)phenyl]-N-[4-(10-  
methoxy-9-anthracenyl)phenyl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

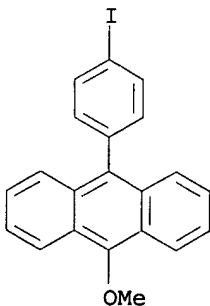


IT 452069-68-0

RL: RCT (Reactant); RACT (Reactant or reagent)  
(**electroluminescent** component and preparation method)

RN 452069-68-0 HCAPLUS

CN Anthracene, 9-(4-iodophenyl)-10-methoxy- (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
ICS H05B033-10

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent device luminescent material**

IT **charge transport**

IT **Electroluminescent devices**  
Luminescent substances  
(**electroluminescent** component and preparation method)

IT Electric current carriers  
(transport; **electroluminescent** component and preparation method)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 7439-88-5, Iridium, uses 7439-91-0, Lanthanum, uses 7440-06-4, Platinum, uses 7440-27-9, Terbium, uses 7440-57-5, Gold, uses 51325-95-2, DCM 2 58328-31-7, 4,4'-Bis(carbazol-9-yl)biphenyl  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescent** component and preparation method)

IT 131312-28-2P 317366-13-5P 346610-47-7P 346610-48-8P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(**electroluminescent** component and preparation method)

IT 93-61-8, N-Methylformanilide 95-50-1, o-Dichlorobenzene 98-95-3, Nitrobenzene, reactions 122-80-5 123-39-7, N-Methylformamide 591-50-4, Iodobenzene 696-62-8, p-Iodoanisole 2350-01-8, N,N-Diphenyl-p-phenylenediamine 27329-60-8, Diethyl-diphenylmethyl phosphonate 452069-68-0 452069-70-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**electroluminescent** component and preparation method)

IT 14118-16-2P, N,N,N',N'-Tetraphenyl-p-phenylene diamine 123073-08-5P 124526-50-7P 452069-15-7P 452069-66-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(**electroluminescent** component and preparation method)

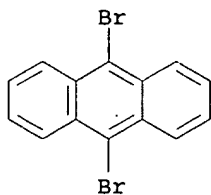
L105 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN  
2002:142641 Document No. 136:191499 Hydrocarbon compound for organic **electroluminescent** elements and using them. Ishida, Tsutomu; Shimamura, Takehiko; Totani, Yoshiyuki; Nakatsuka, Masakatsu (Mitsui Chemicals, Inc., Japan). PCT Int. Appl. WO 2002014244 A1 20020221, 251 pp. DESIGNATED STATES: W: KR, US; RW: DE, FR, NL. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP6920 20010810. PRIORITY: JP 2000-242476 20000810; JP 2000-268568 20000905.

IT 523-27-3 23673-92-9 23674-20-6  
121848-75-7 158902-11-5 334658-75-2  
400606-99-7 400607-00-3 400607-01-4  
400607-02-5 400607-03-6 400607-04-7  
400607-05-8 400607-06-9 400607-07-0  
400607-08-1 400607-09-2 400607-10-5  
400607-11-6 400607-12-7 400607-13-8  
400607-14-9 400607-15-0 400607-16-1  
400607-22-9 400607-23-0 400607-24-1  
400607-25-2 400607-35-4 400607-36-5  
400607-37-6 400607-40-1 400607-41-2  
400607-42-3 400607-43-4 400607-44-5  
400607-45-6 400607-46-7 400607-47-8  
400607-48-9 400607-49-0 400607-50-3  
400607-51-4 400607-52-5 400607-53-6  
400607-54-7 400607-55-8 400607-59-2  
400607-60-5 400607-61-6 400607-62-7  
400607-63-8 400607-64-9 400607-65-0  
400607-66-1 400607-68-3 400607-69-4  
400607-70-7 400607-81-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of hydrocarbon compound for organic **electroluminescent** devices)

RN 523-27-3 HCAPLUS

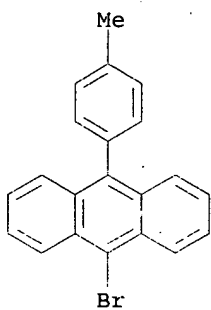


CN Anthracene, 9,10-dibromo- (6CI, 8CI, 9CI) (CA INDEX NAME)



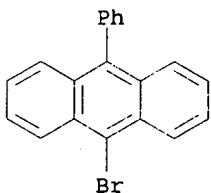
RN 23673-92-9 HCAPLUS

CN Anthracene, 9-bromo-10-(4-methylphenyl)- (9CI) (CA INDEX NAME)



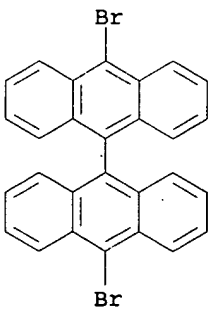
RN 23674-20-6 HCAPLUS

CN Anthracene, 9-bromo-10-phenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



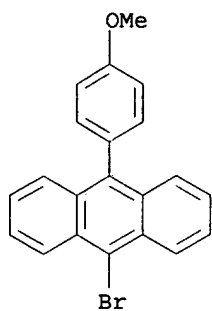
RN 121848-75-7 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-dibromo- (9CI) (CA INDEX NAME)

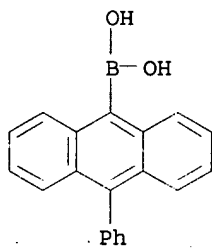


RN 158902-11-5 HCAPLUS

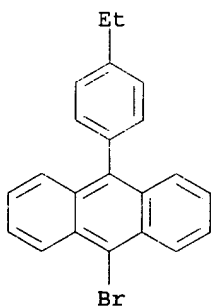
CN Anthracene, 9-bromo-10-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



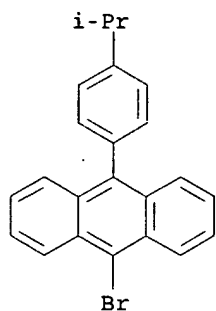
RN 334658-75-2 HCAPLUS  
CN Boronic acid, (10-phenyl-9-anthracenyl)- (9CI) (CA INDEX NAME)



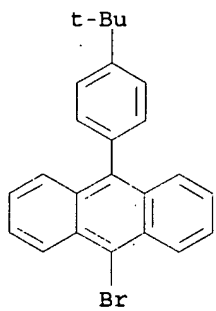
RN 400606-99-7 HCAPLUS  
CN Anthracene, 9-bromo-10-(4-ethylphenyl)- (9CI) (CA INDEX NAME)



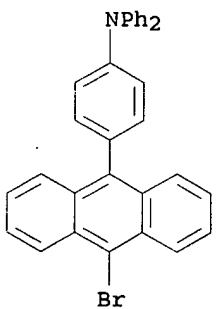
RN 400607-00-3 HCAPLUS  
CN Anthracene, 9-bromo-10-[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)



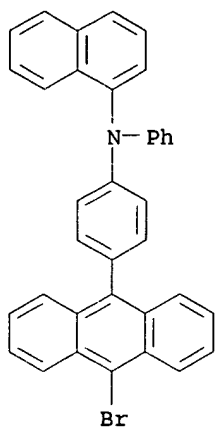
RN 400607-01-4 HCAPLUS  
CN Anthracene, 9-bromo-10-[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)



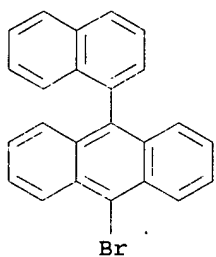
RN 400607-02-5 HCAPLUS  
CN Benzenamine, 4-(10-bromo-9-anthracenyl)-N,N-diphenyl- (9CI) (CA INDEX NAME)



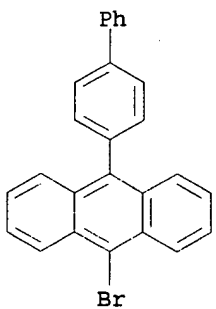
RN 400607-03-6 HCAPLUS  
CN 1-Naphthalenamine, N-[4-(10-bromo-9-anthracenyl)phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



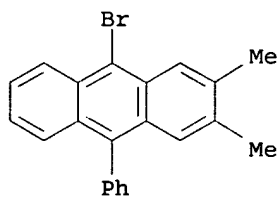
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CN Anthracene, 9-bromo-10-(1-naphthalenyl)- (9CI) (CA INDEX NAME)



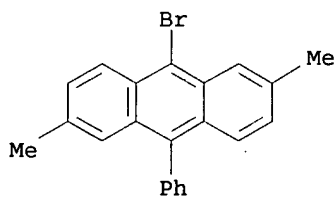
RN 400607-05-8 HCAPLUS  
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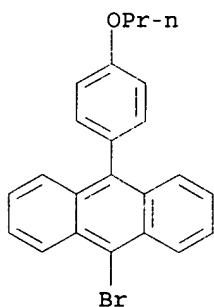
RN 400607-06-9 HCAPLUS  
CN Anthracene, 9-bromo-2,3-dimethyl-10-phenyl- (9CI) (CA INDEX NAME)



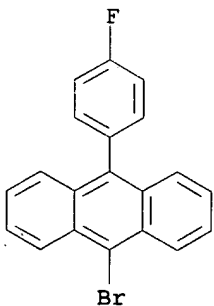
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CN Anthracene, 9-bromo-2,6-dimethyl-10-phenyl- (9CI) (CA INDEX NAME)



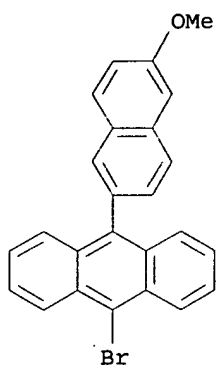
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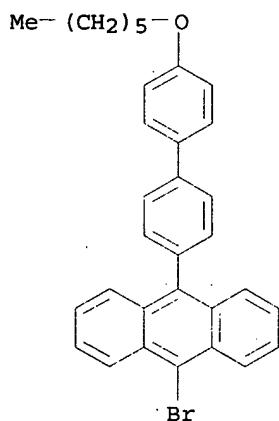
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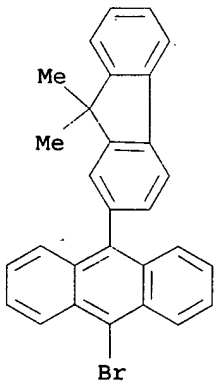
RN 400607-10-5 HCAPLUS  
CN Anthracene, 9-bromo-10-(6-methoxy-2-naphthalenyl)- (9CI) (CA INDEX NAME)



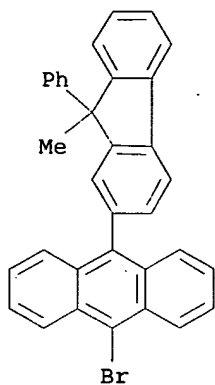
RN 400607-11-6 HCAPLUS  
CN Anthracene, 9-bromo-10-[4'-(hexyloxy)[1,1'-biphenyl]-4-yl]- (9CI)  
(CA INDEX NAME)



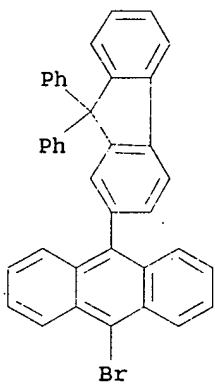
RN 400607-12-7 HCAPLUS  
CN Anthracene, 9-bromo-10-(9,9-dimethyl-9H-fluoren-2-yl)- (9CI) (CA  
INDEX NAME)



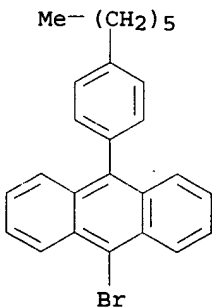
RN 400607-13-8 HCAPLUS  
CN Anthracene, 9-bromo-10-(9-methyl-9-phenyl-9H-fluoren-2-yl)- (9CI)  
(CA INDEX NAME)



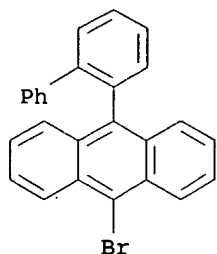
RN 400607-14-9 HCAPLUS  
CN Anthracene, 9-bromo-10-(9,9-diphenyl-9H-fluoren-2-yl)- (9CI) (CA INDEX NAME)



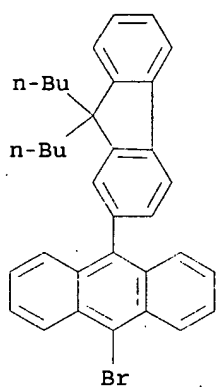
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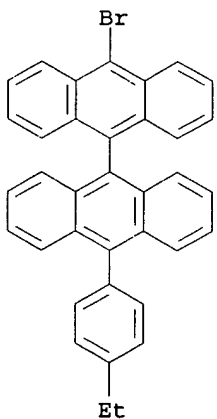
RN 400607-16-1 HCAPLUS  
CN Anthracene, 9-[1,1'-biphenyl]-2-yl-10-bromo- (9CI) (CA INDEX NAME)



RN 400607-22-9 HCAPLUS  
CN Anthracene, 9-bromo-10-(9,9-dibutyl-9H-fluoren-2-yl)- (9CI) (CA  
INDEX NAME)

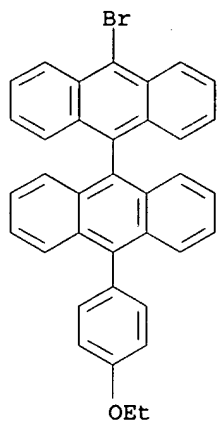


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NAME)

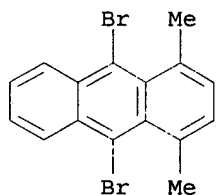


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NAME)

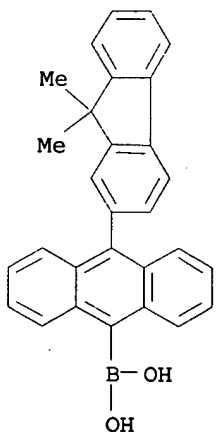




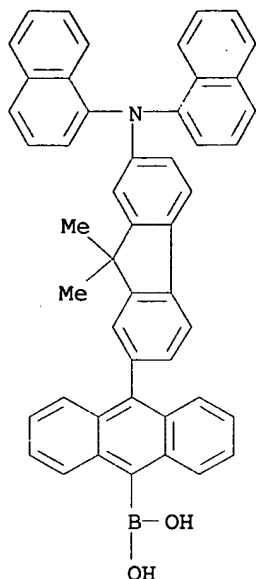
RN 400607-25-2 HCAPLUS  
 CN Anthracene, 9,10-dibromo-1,4-dimethyl- (9CI) (CA INDEX NAME)



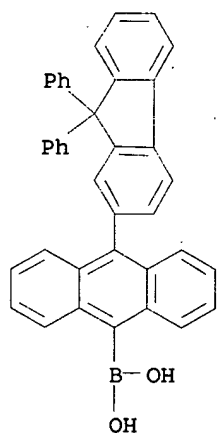
RN 400607-35-4 HCAPLUS  
 CN Boronic acid, [10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-  
 (9CI) (CA INDEX NAME)



RN 400607-36-5 HCAPLUS  
 CN Boronic acid, [10-[7-(di-1-naphthalenylamino)-9,9-dimethyl-9H-fluoren-2-yl]-9-anthracenyl]- (9CI) (CA INDEX NAME)

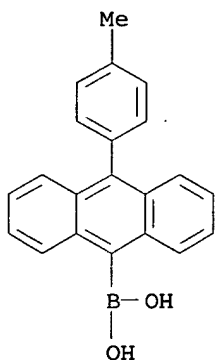


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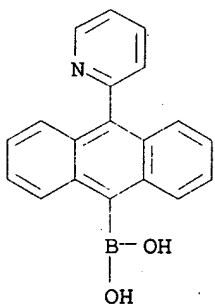
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RN 400607-40-1 HCAPLUS

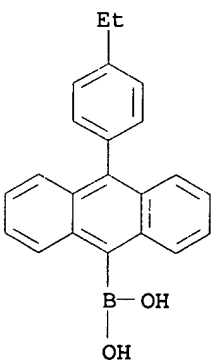
CN Boronic acid, [10-(4-methylphenyl)-9-anthracenyl]- (9CI) (CA INDEX  
NAME)



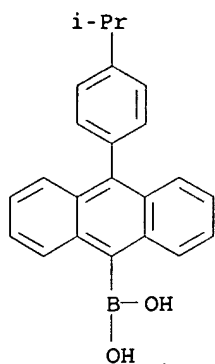
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CN Boronic acid, [10-(2-pyridinyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



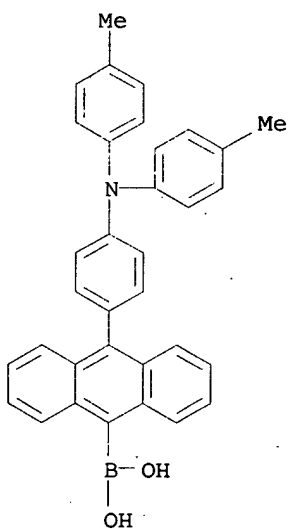
RN 400607-42-3 HCAPLUS  
CN Boronic acid, [10-(4-ethylphenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



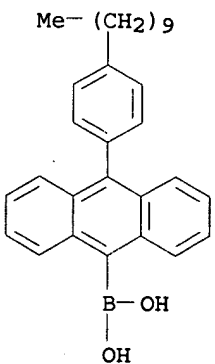
RN 400607-43-4 HCAPLUS  
CN Boronic acid, [10-[4-(1-methylethyl)phenyl]-9-anthracenyl]- (9CI)  
(CA INDEX NAME)



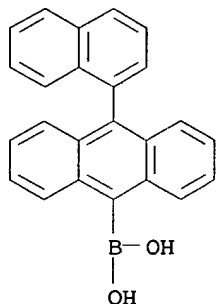
RN 400607-44-5 HCAPLUS  
 CN Boronic acid, [10-[4-[bis(4-methylphenyl)amino]phenyl]-9-anthracenyl]- (9CI) (CA INDEX NAME)



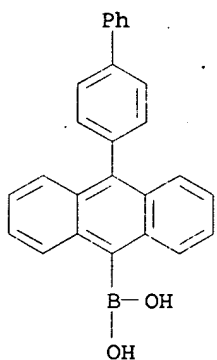
RN 400607-45-6 HCAPLUS  
 CN Boronic acid, [10-(4-decylphenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



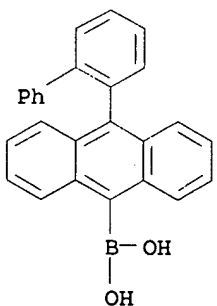
RN 400607-46-7 HCAPLUS  
CN Boronic acid, [10-(1-naphthalenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



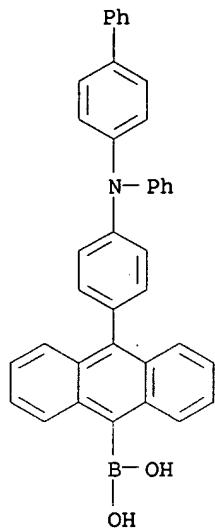
RN 400607-47-8 HCAPLUS  
CN Boronic acid, (10-[1,1'-biphenyl]-4-yl-9-anthracenyl)- (9CI) (CA INDEX NAME)



RN 400607-48-9 HCAPLUS  
CN Boronic acid, (10-[1,1'-biphenyl]-2-yl-9-anthracenyl)- (9CI) (CA INDEX NAME)

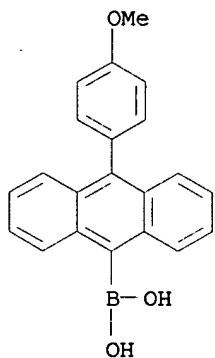


RN 400607-49-0 HCAPLUS  
CN Boronic acid, [10-[4-([1,1'-biphenyl]-4-ylphenylamino)phenyl]-9-anthracenyl]- (9CI) (CA INDEX NAME)



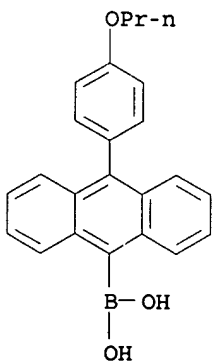
RN 400607-50-3 HCAPLUS

CN Boronic acid, [10-(4-methoxyphenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)

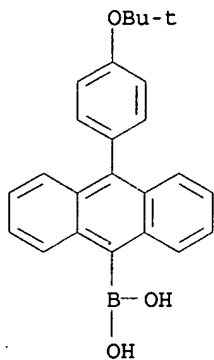


RN 400607-51-4 HCAPLUS

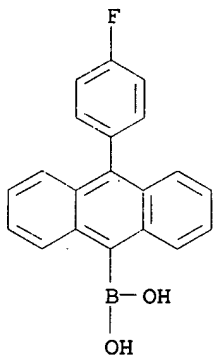
CN Boronic acid, [10-(4-propoxyphenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



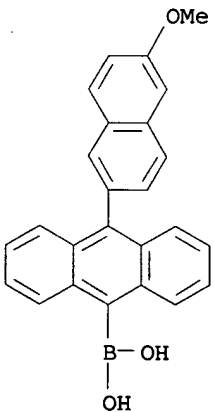
RN 400607-52-5 HCAPLUS  
CN Boronic acid, [10-[4-(1,1-dimethylethoxy)phenyl]-9-anthracenyl]-  
(9CI) (CA INDEX NAME)



RN 400607-53-6 HCAPLUS  
CN Boronic acid, [10-(4-fluorophenyl)-9-anthracenyl]- (9CI) (CA INDEX  
NAME)

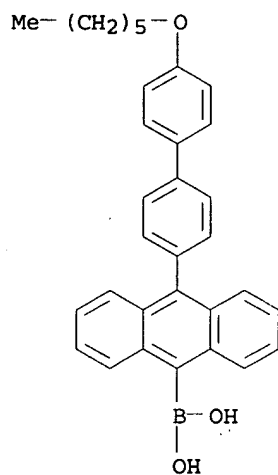


RN 400607-54-7 HCAPLUS  
CN Boronic acid, [10-(6-methoxy-2-naphthalenyl)-9-anthracenyl]- (9CI)  
(CA INDEX NAME)



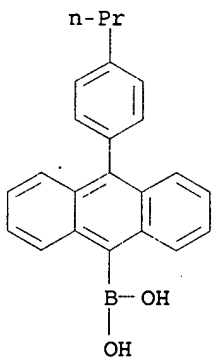
RN 400607-55-8 HCAPLUS

CN Boronic acid, [10-[4'-(hexyloxy)[1,1'-biphenyl]-4-yl]-9-anthracenyl]-  
(9CI) (CA INDEX NAME)



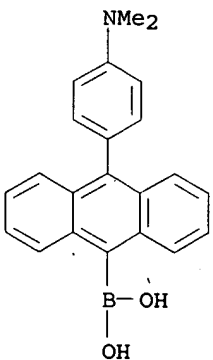
RN 400607-59-2 HCAPLUS

CN Boronic acid, [10-(4-propylphenyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



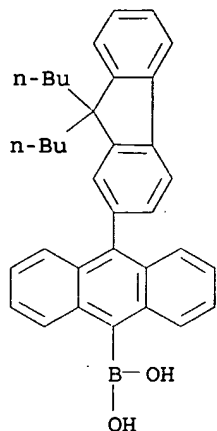
RN 400607-60-5 HCAPLUS

CN Boronic acid, [10-[4-(dimethylamino)phenyl]-9-anthracenyl]- (9CI)  
(CA INDEX NAME)

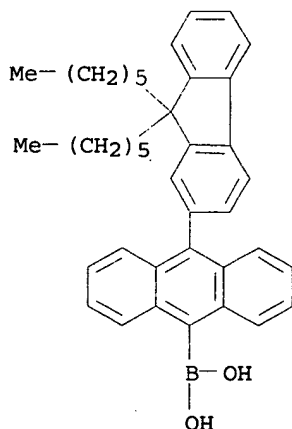




RN 400607-61-6 HCAPLUS  
CN Boronic acid, [10-(9,9-dibutyl-9H-fluoren-2-yl)-9-anthracenyl]-  
(9CI) (CA INDEX NAME)

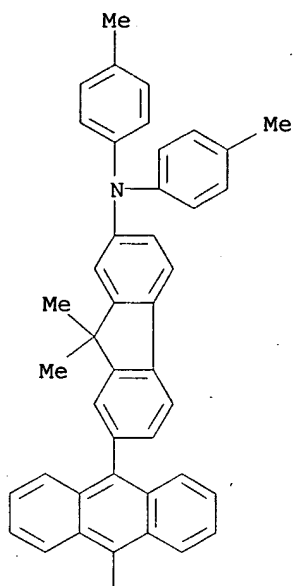


RN 400607-62-7 HCAPLUS  
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(9CI) (CA INDEX NAME)

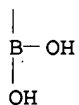


RN 400607-63-8 HCAPLUS  
CN Boronic acid, [10-[7-[bis(4-methylphenyl)amino]-9,9-dimethyl-9H-fluoren-2-yl]-9-anthracenyl]- (9CI) (CA INDEX NAME)

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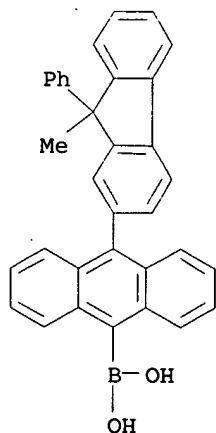


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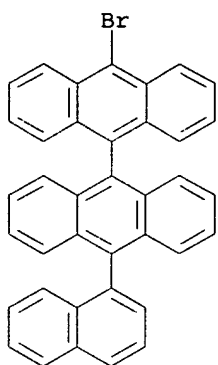
RN 400607-64-9 HCAPLUS

CN Boronic acid, [10-(9-methyl-9-phenyl-9H-fluoren-2-yl)-9-anthracenyl]-(9CI) (CA INDEX NAME)

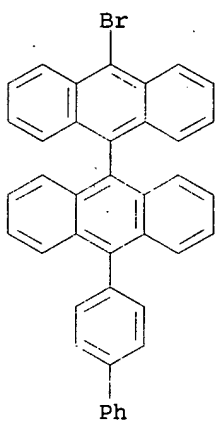


RN 400607-65-0 HCAPLUS

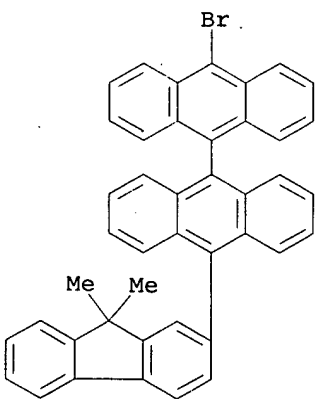
CN 9,9'-Bianthracene, 10-bromo-10'-(1-naphthalenyl)-(9CI) (CA INDEX NAME)



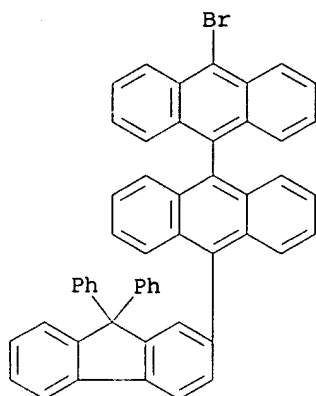
RN 400607-66-1 HCAPLUS  
CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-4-yl-10'-bromo- (9CI) (CA  
INDEX NAME)



RN 400607-68-3 HCAPLUS  
CN 9,9'-Bianthracene, 10-bromo-10'-(9,9-dimethyl-9H-fluoren-2-yl)-  
(9CI) (CA INDEX NAME)

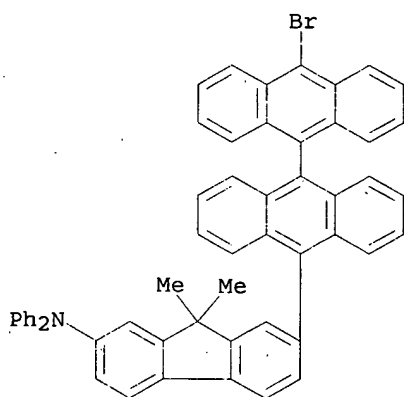


RN 400607-69-4 HCAPLUS  
CN 9,9'-Bianthracene, 10-bromo-10'-(9,9-diphenyl-9H-fluoren-2-yl)-  
(9CI) (CA INDEX NAME)



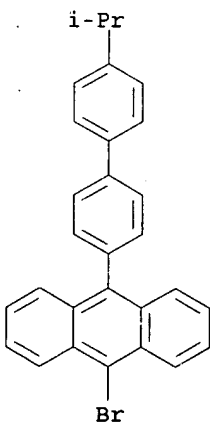
RN 400607-70-7 HCAPLUS

CN 9H-Fluoren-2-amine, 7-(10'-bromo[9,9'-bianthracen]-10-yl)-9,9-dimethyl-N,N-diphenyl- (9CI) (CA INDEX NAME)



RN 400607-81-0 HCAPLUS

CN Anthracene, 9-bromo-10-[4'-(1-methylethyl)[1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



IC ICM C07C013-58

ICS C07C025-22; C07C043-235; C07C211-53; C07C211-61; C09K011-06;  
C07D213-16; C07D333-18; C07D215-04; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 24, 74

ST anthracene fluorene **electroluminescent device**

IT **Electroluminescent devices**  
(preparation of hydrocarbon compound containing anthracene and fluorene for)

IT Fluorescent substances  
(preparation of hydrocarbon compound containing anthracene and fluorene for **EL devices**)

IT Hydrocarbons, uses  
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
(preparation of hydrocarbon compound containing anthracene and fluorene for **EL devices**)

IT 2085-33-8  
RL: DEV (Device component use); USES (Uses)  
(**electron injection/transport** layer; preparation of hydrocarbon compound for organic **electroluminescent devices**)

IT 38215-36-0  
RL: DEV (Device component use); USES (Uses)  
(green **light-emitting** component; preparation of hydrocarbon compound for organic **electroluminescent devices**)

IT 65181-78-4 124729-98-2  
RL: DEV (Device component use); USES (Uses)  
(**hole injection/transport** layer; preparation of hydrocarbon compound for organic **electroluminescent devices**)

IT 24601-13-6 146162-48-3 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(**light-emitting** layer containing; preparation of hydrocarbon compound for organic **electroluminescent devices**)

IT 51325-91-8, DCM 1  
RL: DEV (Device component use); USES (Uses)  
(orange **light-emitting** component; preparation of hydrocarbon compound for organic **electroluminescent devices**)

IT 14221-01-3, Tetrakis(triphenylphosphine)palladium 25067-59-8  
138372-67-5 150405-69-9  
RL: DEV (Device component use); USES (Uses)  
(preparation of hydrocarbon compound for organic **electroluminescent devices**)

IT 400605-76-7 400605-78-9 400605-79-0 400605-81-4 400605-82-5  
400605-84-7 400605-85-8 400605-87-0 400605-88-1 400605-90-5  
400605-92-7 400605-94-9 400605-96-1 400605-97-2 400605-99-4  
400606-00-0 400606-02-2 400606-03-3 400606-04-4 400606-06-6  
400606-07-7 400606-08-8 400606-09-9 400606-10-2 400606-11-3  
400606-12-4 400606-14-6 400606-15-7 400606-17-9 400606-18-0  
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400606-43-1 400606-45-3 400606-47-5 400606-48-6 400606-49-7  
400606-50-0 400606-51-1 400606-52-2 400606-53-3 400606-54-4  
400606-55-5 400606-56-6 400606-57-7 400606-58-8 400606-59-9  
400606-60-2 400606-61-3 400606-62-4 400606-63-5 400606-64-6  
400606-65-7 400606-66-8 400606-67-9 400606-68-0 400606-69-1  
400606-70-4 400606-71-5 400606-72-6 400606-73-7 400606-74-8  
400606-75-9 400606-76-0 400606-77-1 400606-78-2 400606-79-3  
400606-80-6 400606-81-7 400606-82-8 400606-83-9 400606-84-0  
400606-85-1 400606-86-2 400606-87-3 400606-88-4 400606-89-5  
400606-90-8 400606-91-9 400606-92-0 400606-93-1 400606-94-2  
400606-95-3 400606-96-4 400606-97-5 400606-98-6

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(preparation of hydrocarbon compound for organic electroluminescent devices)

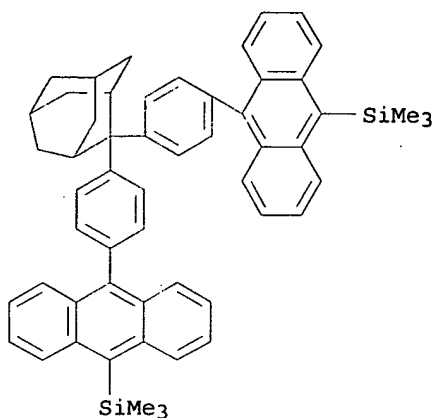
IT 523-27-3 23673-92-9 23674-20-6  
121848-75-7 144981-86-2 144981-88-4 145005-98-7  
158902-11-5 278176-05-9 333432-28-3 334658-75-2  
371193-08-7 400606-99-7 400607-00-3  
400607-01-4 400607-02-5 400607-03-6  
400607-04-7 400607-05-8 400607-06-9  
400607-07-0 400607-08-1 400607-09-2  
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400607-13-8 400607-14-9 400607-15-0  
400607-16-1 400607-17-2 400607-18-3 400607-19-4  
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400607-24-1 400607-25-2 400607-26-3  
400607-27-4 400607-28-5 400607-29-6 400607-30-9 400607-31-0  
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400607-51-4 400607-52-5 400607-53-6  
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400607-57-0 400607-58-1 400607-59-2 400607-60-5  
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400607-64-9 400607-65-0 400607-66-1  
400607-67-2 400607-68-3 400607-69-4  
400607-70-7 400607-71-8 400607-72-9 400607-73-0  
400607-74-1 400607-75-2 400607-76-3 400607-77-4 400607-78-5  
400607-79-6 400607-80-9 400607-81-0

RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of hydrocarbon compound for organic electroluminescent devices)

L105 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN  
2001:280653 Document No. 134:302846 **Electroluminescence**  
component. Tanaka, Hiromitsu; Mouri, Makoto; Takeuchi, Hisato;  
Tokito, Seishi (Toyota Central Research and Development  
Laboratories, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2001110572 A2  
20010420, 32 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2000-237442 20000804. PRIORITY: JP 1999-221653 19990804.

IT 334658-78-5P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(electroluminescence component)

RN 334658-78-5 HCAPLUS  
CN Silane, [tricyclo[3.3.1.1<sup>3,7</sup>]decylidenebis(4,1-phenylene-10,9-anthracenediyl)]bis[trimethyl- (9CI) (CA INDEX NAME)



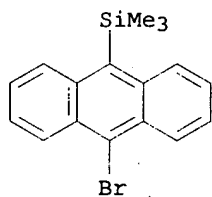
IT 89811-60-9 334658-75-2 334658-82-1

334658-83-2

RL: RCT (Reactant); RACT (Reactant or reagent).  
(electroluminescence component)

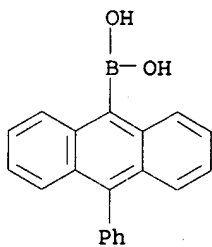
RN 89811-60-9 HCAPLUS

CN Silane, (10-bromo-9-anthracenyl)trimethyl- (9CI) (CA INDEX NAME)



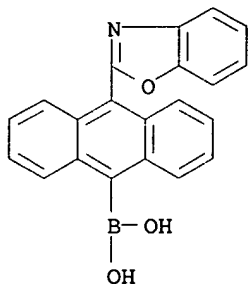
RN 334658-75-2 HCAPLUS

CN Boronic acid, (10-phenyl-9-anthracenyl)- (9CI) (CA INDEX NAME)

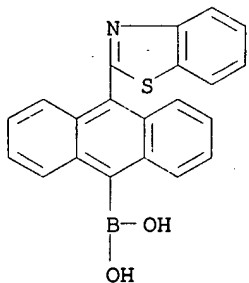


RN 334658-82-1 HCAPLUS

CN Boronic acid, [10-(2-benzoxazolyl)-9-anthracenyl]- (9CI) (CA INDEX NAME)



RN 334658-83-2 HCAPLUS  
 CN Boronic acid, [10-(2-benzothiazolyl)-9-anthracenyl]- (9CI) (CA  
 INDEX NAME)



IC ICM H05B033-14  
 ICS C09K011-06; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 ST **electroluminescence device** adamantane  
 IT **Electroluminescent devices**  
     **(electroluminescence component)**  
 IT 164396-23-0P 164396-24-1P 334658-67-2P 334658-68-3P  
 334658-69-4P 334658-70-7P 334658-71-8P 334658-72-9P  
 334658-73-0P 334658-76-3P **334658-78-5P** 334658-79-6P  
 334658-80-9P 334658-85-4P 334658-86-5P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)  
     **(electroluminescence component)**  
 IT 62-53-3, Aniline, reactions 87-62-7, 2,6-Dimethylaniline  
 90-14-2, 1-Iodonaphthalene 95-53-4, o-Toluidine, reactions  
 121-44-8, Triethylamine, reactions 142-04-1, Aniline hydrochloride  
 591-50-4, Iodobenzene 636-21-5, o-Toluidine hydrochloride  
 700-58-3, 2-Adamantanone 14221-01-3 21436-98-6,  
 2,6-Dimethylaniline hydrochloride 68572-87-2 **89811-60-9**  
 164461-18-1 246546-06-5 **334658-75-2 334658-82-1**  
**334658-83-2**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
     **(electroluminescence component)**  
 IT 334658-84-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
     **(electroluminescence component)**

L105 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2000:277799 Document No. 132:315621 Organic electroluminescent  
 device using hole-injectable,  
 light-emitting material. Oda, Atsushi; Ishikawa,  
 Hitoshi; Toguchi, Satoru; Morioka, Yukiko (NEC Corporation, Japan;



Samsung SDI Co., Ltd.). Eur. Pat. Appl. EP 996177 A2 20000426, 28 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-121184 19991022. PRIORITY: JP 1998-302547 19981023.

IT 247585-27-9 265120-87-4 265120-88-5

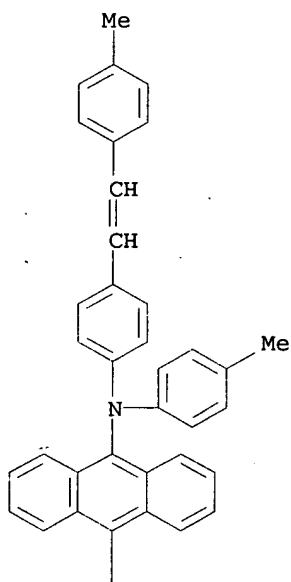
265120-97-6

RL: DEV (Device component use); USES (Uses)  
(organic **electroluminescent devices** using  
styrylamino group-containing diarylaminoarylenes)

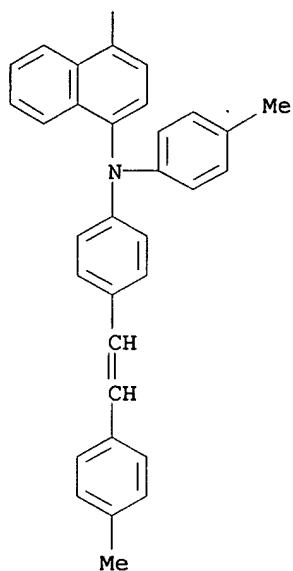
RN 247585-27-9 HCAPLUS

CN 9-Anthracenamine, N-(4-methylphenyl)-N-[4-[2-(4-methylphenyl)ethenyl]phenyl]-10-[4-[(4-methylphenyl)[4-[2-(4-methylphenyl)ethenyl]phenyl]amino]-1-naphthalenyl]- (9CI) (CA INDEX NAME)

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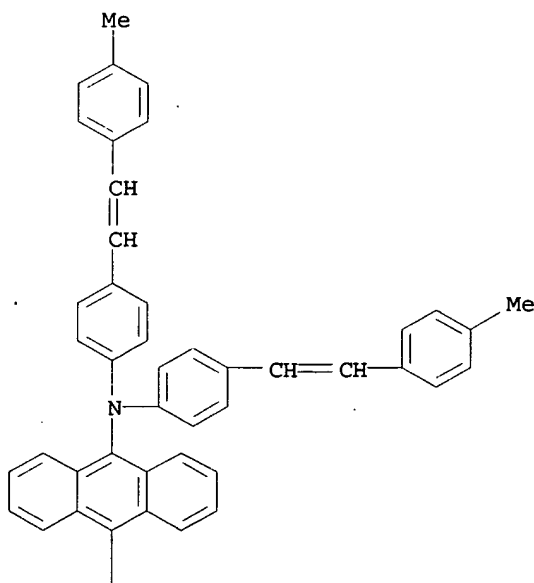


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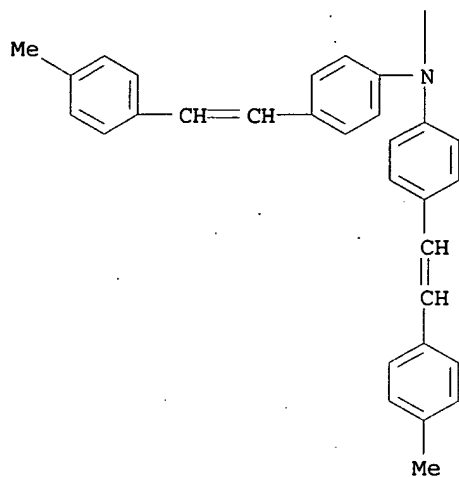


RN 265120-87-4 HCAPLUS  
 CN 9,10-Anthracenediamine, N,N,N',N'-tetrakis[4-[2-(4-methylphenyl)ethenyl]phenyl]- (9CI) (CA INDEX NAME)

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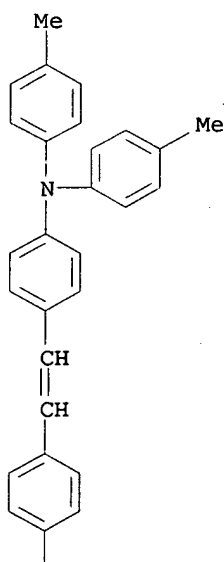


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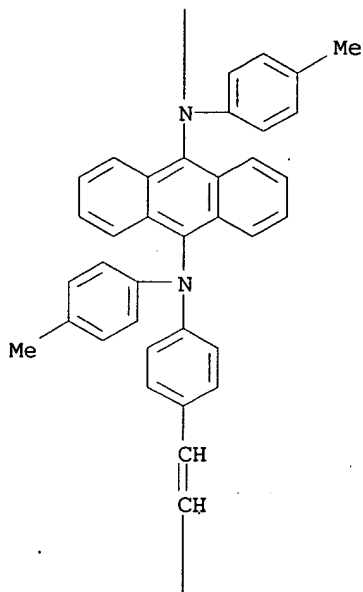


RN 265120-88-5 HCAPLUS  
CN 9,10-Anthracenediamine, N,N'-bis[4-[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]phenyl]-N,N'-bis(4-methylphenyl)-  
(9CI) (CA INDEX NAME)

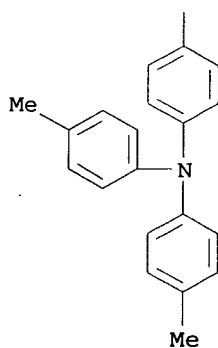
PAGE 1-A



PAGE 2-A

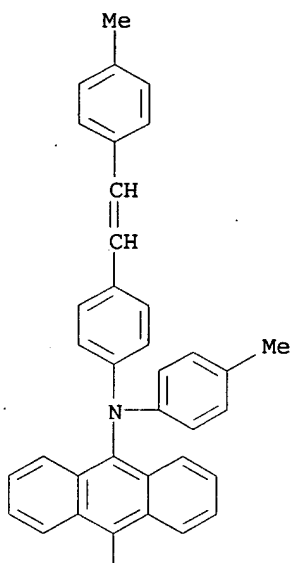


PAGE 3-A

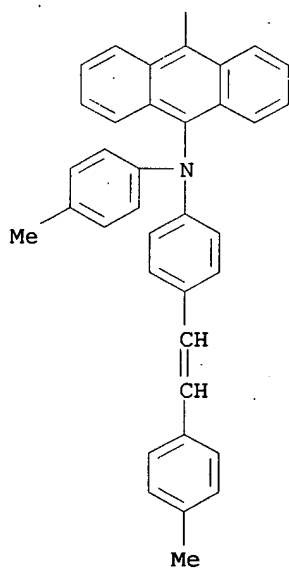


RN 265120-97-6 HCAPLUS  
CN [9,9'-Bianthracene]-10,10'-diamine, N,N'-bis(4-methylphenyl)-N,N'-bis[4-[2-(4-methylphenyl)ethenyl]phenyl]- (9CI) (CA INDEX NAME)

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IC ICM H01L051-20  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 76  
 ST styrylamino group contg diarylaminoarylene  
**electroluminescent device**  
 IT **Electroluminescent devices**  
**Electroluminescent devices**  
 (organic **electroluminescent devices** using  
 styrylamino group-containing diarylaminoarylenes)  
 IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 15082-28-7

37271-44-6 38215-36-0 50926-11-9, Indium tin oxide 138372-67-5  
 142289-08-5 146162-49-4 146162-54-1 150405-69-9 186409-20-1  
 221453-36-7 221453-37-8 221453-38-9 221453-40-3 227010-25-5  
 247585-27-9 252644-43-2 252645-38-8 259143-64-1  
 264126-81-0 265120-80-7 265120-81-8 265120-82-9 265120-83-0  
 265120-84-1 265120-85-2 265120-86-3 **265120-87-4**  
 265120-88-5 265120-89-6 265120-90-9 265120-91-0  
 265120-92-1 265120-93-2 265120-94-3 265120-95-4 265120-96-5  
 265120-97-6 265120-98-7 265120-99-8 265121-00-4

RL: DEV (Device component use); USES (Uses)  
 (organic **electroluminescent devices** using  
 styrylamino group-containing diarylaminoarylenes)

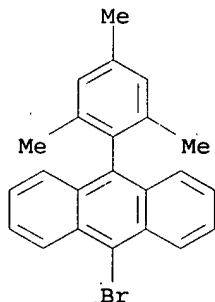
L105 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN

1999:579978 Document No. 131:322998 Sulfonation and Epoxidation of  
 Substituted Polynorbornenes and Construction of **Light-**  
**Emitting Devices**. Boyd, Thomas J.; Schrock,  
 Richard R. (Department of Chemistry and Center for Materials Science  
 and Engineering, Massachusetts Institute of Technology, Cambridge,  
 MA, 02139, USA). Macromolecules, 32(20), 6608-6618 (English) 1999.  
 CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical  
 Society.

IT **248583-99-5P**, 9-Bromo-10-mesitylanthracene  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (intermediate; preparation of substituted norbornene monomers and  
 ring-opening metathesis polymerization to obtain polynorbornenes for  
**light-emitting devices**)

RN 248583-99-5 HCAPLUS

CN Anthracene, 9-bromo-10-(2,4,6-trimethylphenyl)- (9CI) (CA INDEX  
 NAME)

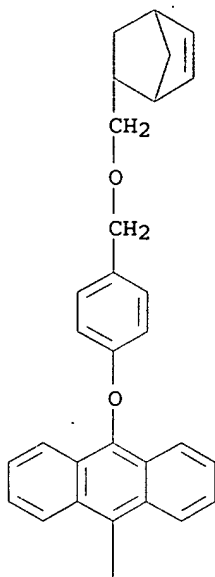


IT **248584-03-4P**, p-(10-Mesitylanthracyl)benzyl  
 (5-Norbornenyl)methyl Ether  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (monomer; preparation of substituted norbornene monomers and  
 ring-opening metathesis polymerization to obtain polynorbornenes for  
**light-emitting devices**)

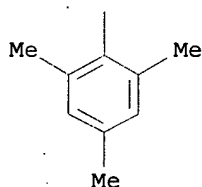
RN 248584-03-4 HCAPLUS

CN Anthracene, 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenoxy]-10-(2,4,6-trimethylphenyl)- (9CI) (CA  
 INDEX NAME)

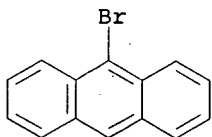
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IT 1564-64-3, 9-Bromoanthracene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of substituted norbornene monomers and ring-opening  
 metathesis polymerization to obtain polynorbornenes for light-  
 emitting devices)  
 RN 1564-64-3 HCAPLUS  
 CN Anthracene, 9-bromo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



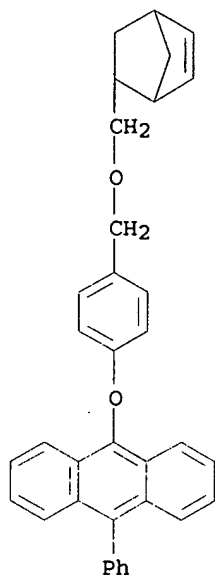
IT 248584-16-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (preparation of substituted norbornene monomers and ring-opening  
 metathesis polymerization to obtain polynorbornenes for light-  
 emitting devices)  
 RN 248584-16-9 HCAPLUS  
 CN Anthracene, 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenoxy]-10-phenyl-, homopolymer (9CI) (CA INDEX)

NAME)

CM 1

CRN 248584-15-8

CMF C35 H30 O2



IT 248584-16-9DP, sulfonated 248584-18-1DP,  
sulfonated 248584-24-9DP, sulfonated 248584-26-1DP  
, sulfonated

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
preparation); PREP (Preparation); USES (Uses)

(preparation of sulfonated substituted polynorbornenes and  
**electroluminescence** and use in LEDs)

RN 248584-16-9 HCAPLUS

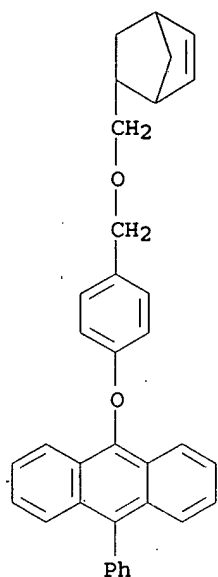
CN Anthracene, 9-[4-[(bicyclo[2.2.1]hept-5-en-2-  
ylmethoxy)methyl]phenoxy]-10-phenyl-, homopolymer (9CI) (CA INDEX  
NAME)

CM 1

CRN 248584-15-8

CMF C35 H30 O2





RN 248584-18-1 HCAPLUS

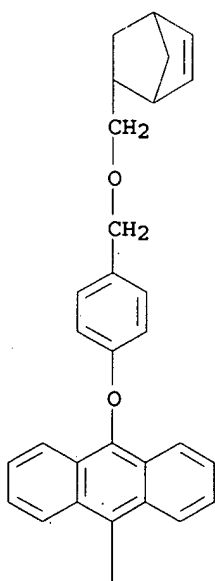
CN Anthracene, 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenoxy]-10-(2,4,6-trimethylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

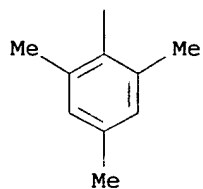
CRN 248584-03-4

CMF C38 H36 O2

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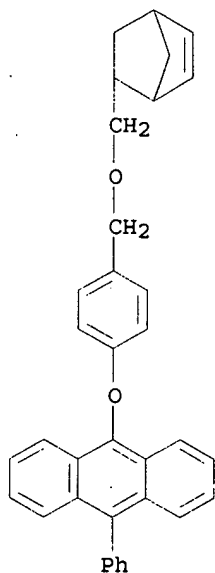
PAGE 2-A



RN 248584-24-9 HCAPLUS  
CN 1,3,4-Oxadiazole, 2-[4'-[(bicyclo[2.2.1]hept-5-en-2-ylmethyl)thio][1,1'-biphenyl]-4-yl]-5-[4-(1,1-dimethylethyl)phenyl]-, polymer with 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenoxy]-10-phenylanthracene (9CI) (CA INDEX NAME)

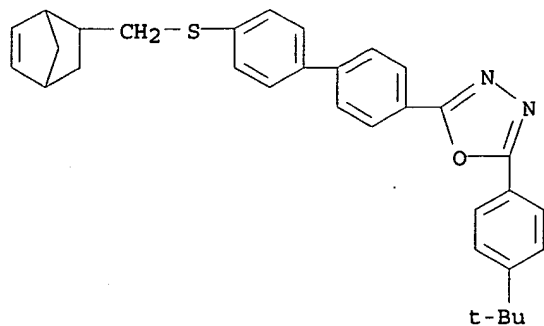
CM 1

CRN 248584-15-8  
CMF C35 H30 O2



CM 2

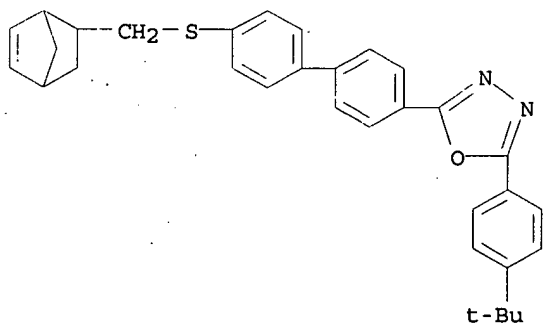
CRN 248584-11-4  
CMF C32 H32 N2 O S



RN 248584-26-1 HCAPLUS  
 CN 1,3,4-Oxadiazole, 2-[4'-[(bicyclo[2.2.1]hept-5-en-2-ylmethyl)thio][1,1'-biphenyl]-4-yl]-5-[4-(1,1-dimethylethyl)phenyl]-, polymer with 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenoxy]-10-(2,4,6-trimethylphenyl)anthracene (9CI)  
 (CA INDEX NAME)

CM 1

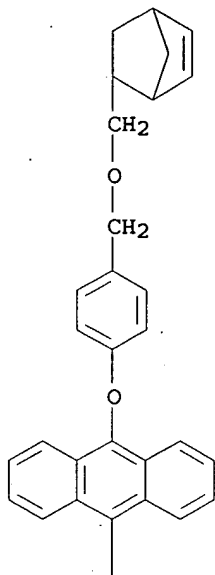
CRN 248584-11-4  
 CMF C32 H32 N2 O S



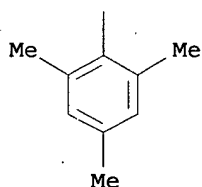
CM 2

CRN 248584-03-4  
 CMF C38 H36 O2

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PAGE 2-A



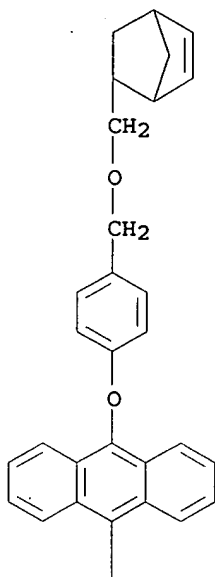
IT 248584-18-1P, p-(10-Mesitylanthracyl)benzyl  
 (5-Norbornenyl)methyl Ether homopolymer 248584-24-9P  
 248584-26-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (preparation of sulfonated substituted polynorbornenes and  
 electroluminescence and use in LEDs)

RN 248584-18-1 HCAPLUS  
 CN Anthracene, 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenoxy]-10-(2,4,6-trimethylphenyl)-, homopolymer  
 (9CI) (CA INDEX NAME)

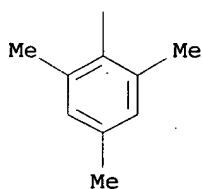
CM 1

CRN 248584-03-4  
 CMF C38 H36 O2

PAGE 1-A



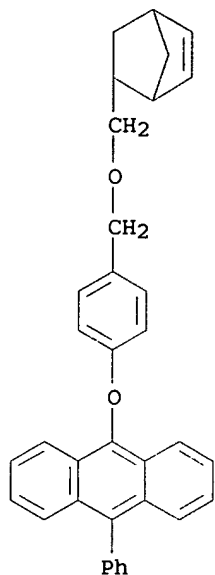
PAGE 2-A



RN 248584-24-9 HCAPLUS  
CN 1,3,4-Oxadiazole, 2-[4'-[(bicyclo[2.2.1]hept-5-en-2-ylmethyl)thio][1,1'-biphenyl]-4-yl]-5-[4-(1,1-dimethylethyl)phenyl]-, polymer with 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenoxy]-10-phenylanthracene (9CI) (CA INDEX NAME)

CM 1

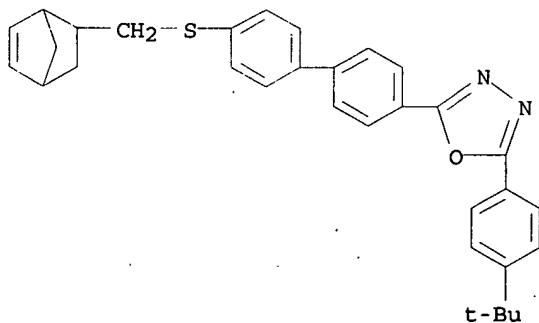
CRN 248584-15-8  
CMF C35 H30 O2



CM 2

CRN 248584-11-4

CMF C32 H32 N2 O S



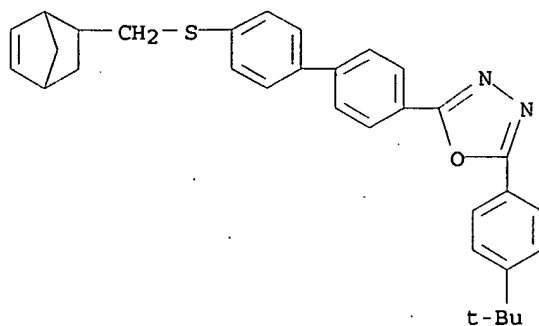
RN 248584-26-1 HCAPLUS

CN 1,3,4-Oxadiazole, 2-[4'-[(bicyclo[2.2.1]hept-5-en-2-ylmethyl)thio][1,1'-biphenyl]-4-yl]-5-[4-(1,1-dimethylethyl)phenyl]-, polymer with 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenoxy]-10-(2,4,6-trimethylphenyl)anthracene (9CI)  
(CA INDEX NAME)

CM 1

CRN 248584-11-4

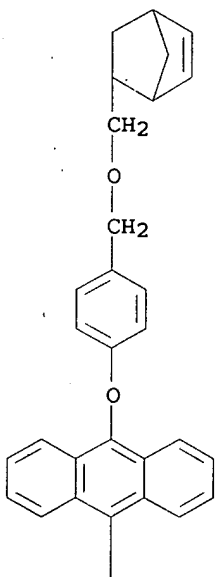
CMF C32 H32 N2 O S



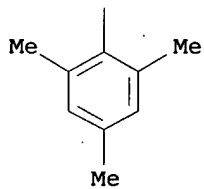
CM 2

CRN 248584-03-4  
 CMF C38 H36 O2

PAGE 1-A



PAGE 2-A



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 74, 76

ST polynorbornene sulfonation epoxidn prepn emitter LED; norbornene  
 substituted monomer thioether sulfonation stability; ring opening

- metathesis polymn substituted norbornene polyanion; **light emitting diode sulfonated polynorbornene electroluminescence layer**
- IT Polymers, preparation  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (conjugated, norbornene containing, sulfonated; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT Polymerization  
 (metathetic, ring-opening; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT Polyphenyls  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (norbornene containing, sulfonated; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT **Electron transport**  
 Epoxidation  
**Hole transport**  
 Luminescence, **electroluminescence**  
 Molecular association  
 Sulfonation  
 (preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT Adsorption  
 (sequential, layer-by-layer; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT Polymer chains  
 (side; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT **Electroluminescent devices**  
 (single and dual layer; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT Ionomers  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (sulfonated polynorbornenes; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT 126949-65-3  
 RL: CAT (Catalyst use); USES (Uses)  
 (ROMP catalyst; preparation of substituted norbornene monomers and ring-opening metathesis polymerization to obtain polynorbornenes for **light-emitting devices**)
- IT 50926-11-9, Indium tin oxide  
 RL: DEV (Device component use); USES (Uses)  
 (**anode**; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT 7429-90-5, Aluminum, uses  
 RL: DEV (Device component use); USES (Uses)  
 (**cathode**; preparation of sulfonated substituted polynorbornenes and **electroluminescence** and use in LEDs)
- IT **248583-99-5P**, 9-Bromo-10-mesitylanthracene **248584-01-2P**, p-(Diethylborate)benzyl (5-Norbornenyl)methyl Ether **248584-08-9P**  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of substituted norbornene monomers and ring-opening metathesis polymerization to obtain polynorbornenes for **light-emitting devices**)



- IT 248584-03-4P, p-(10-Mesitylanthracyl)benzyl  
(5-Norbornenyl)methyl Ether 248584-11-4P, (5-Norbornenyl)methyl-(2-(Biphenyl)-5-(4-tert-butyl-phenyl)-1,3,4-oxadiazole)-4'-yl Thioether  
248584-13-6P, (p-Triphenyl)methyl (5-Norbornenylmethyl) Ether  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)  
(monomer; preparation of substituted norbornene monomers and ring-opening metathesis polymerization to obtain polynorbornenes for light-emitting devices)
- IT 14221-01-3, Tetrakis(triphenylphosphine)palladium  
RL: CAT (Catalyst use); USES (Uses)  
(preparation of substituted norbornene monomers and ring-opening metathesis polymerization to obtain polynorbornenes for light-emitting devices)
- IT 92-66-0, 4-Bromobiphenyl 109-72-8, n-Butyllithium, reactions  
1564-64-3, 9-Bromoanthracene 2633-66-1, Mesitylmagnesium bromide 7726-95-6, Bromine, reactions 7790-94-5, Chlorosulfuric acid 15082-28-7, tert-Butylphenyl-p-biphenyloxadiazole 50626-34-1, (5-Norbornenyl)methyl tosylate 190785-19-4, p-Bromobenzyl (5-norbornenyl)methyl ether  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of substituted norbornene monomers and ring-opening metathesis polymerization to obtain polynorbornenes for light-emitting devices)
- IT 22668-99-1P, 9-Mesitylanthracene 248584-06-7P 248584-16-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)  
(preparation of substituted norbornene monomers and ring-opening metathesis polymerization to obtain polynorbornenes for light-emitting devices)
- IT 30551-89-4D, Poly(allylamine), hydrochloride derivs.  
RL: DEV (Device component use); USES (Uses)  
(preparation of sulfonated substituted polynorbornenes and electroluminescence and use in LEDs)
- IT 25038-76-ODP, Poly(norbornene), sulfonated and epoxidized  
248584-16-9DP, sulfonated 248584-18-1DP, sulfonated 248584-22-7DP, sulfonated 248584-24-9DP, sulfonated 248584-26-1DP, sulfonated  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation of sulfonated substituted polynorbornenes and electroluminescence and use in LEDs)
- IT 248584-20-5DP, sulfonated  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation of sulfonated substituted polynorbornenes and electroluminescence and use in LEDs)
- IT 25038-76-OP, Poly(norbornene) 248584-18-1P, p-(10-Mesitylanthracyl)benzyl (5-Norbornenyl)methyl Ether homopolymer 248584-20-5P, (5-Norbornenyl)methyl-(2-(Biphenyl)-5-(4-tert-butyl-phenyl)-1,3,4-oxadiazole)-4'-yl Thioether homopolymer 248584-22-7P, (p-Triphenyl)methyl (5-Norbornenylmethyl) Ether homopolymer 248584-24-9P 248584-26-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)  
(preparation of sulfonated substituted polynorbornenes and electroluminescence and use in LEDs)
- IT 123-91-1, 1,4-Dioxane, reactions 603-35-0, Triphenylphosphine, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reduction reagent; preparation of substituted norbornene monomers and ring-opening metathesis polymerization to obtain polynorbornenes for light-emitting devices)

New Polynorbornenes That Contain Blue-Light-Emitting and Charge-Transport Side

Chains. Boyd, Thomas J.; Geerts, Yves; Lee, Jin-Kyu; Fogg, Deryn E.; Lavoie, Gino G.; Schrock, Richard R.; Rubner, Michael F. (Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA). *Macromolecules*, 30(12), 3553-3559 (English) 1997. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

IT 190785-26-3P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

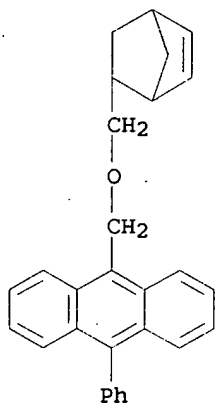
RN 190785-26-3 HCAPLUS

CN Anthracene, 9-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]-10-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 190785-21-8

CMF C29 H26 O



IT 23674-20-6P, 9-Bromo-10-phenylanthracene

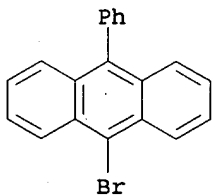
190785-21-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer; electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

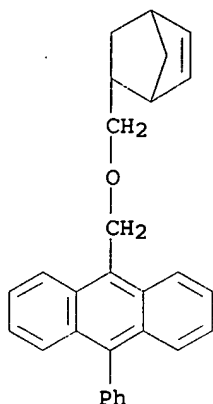
RN 23674-20-6 HCAPLUS

CN Anthracene, 9-bromo-10-phenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 190785-21-8 HCAPLUS

CN Anthracene, 9-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]-10-phenyl- (9CI) (CA INDEX NAME)



- CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 74, 76
- ST **electroluminescent device** side chain  
polynorbornene; blue emitting side chain polynorbornene prepn;  
oxadiazole norbornene monomer **electron transport**  
; aniline norbornene monomer **hole transport**;  
diphenylanthracene norbornene monomer ring opening polymn
- IT **Electroluminescent devices**  
(blue-emitting; **electroluminescence** from new  
polynorbornenes that contain blue-light-  
**emitting** and **charge-transport** side  
chains)
- IT Luminescence, **electroluminescence**  
(blue; **electroluminescence** from new polynorbornenes  
that contain blue-light-emitting and  
**charge-transport** side chains)
- IT Threshold potential  
(of **electroluminescence** devices based on  
polynorbornenes containing blue-light-emitting  
and **charge-transport** side chains)
- IT Polymerization  
(ring-opening, metathesis; **electroluminescence** from new  
polynorbornenes that contain blue-light-  
**emitting** and **charge-transport** side  
chains)
- IT **Electroluminescent devices**  
(single- and two-layer; **electroluminescence** from new  
polynorbornenes that contain blue-light-  
**emitting** and **charge-transport** side  
chains)
- IT Poly(arylenealkenylenes)  
RL: DEV (Device component use); USES (Uses)  
(sublayer; **electroluminescence** from new polynorbornenes  
that contain blue-light-emitting and  
**charge-transport** side chains)
- IT 50926-11-9, ITO  
RL: DEV (Device component use); USES (Uses)  
(anode; **electroluminescence** from new  
polynorbornenes that contain blue-light-  
**emitting** and **charge-transport** side  
chains)
- IT 7429-90-5, Aluminum, uses  
RL: DEV (Device component use); USES (Uses)  
(cathode; **electroluminescence** from new  
polynorbornenes that contain blue-light-  
**emitting** and **charge-transport** side

- chains)
- IT 25087-26-7, Poly(methacrylic acid) 25704-18-1, Poly(sodium styrene-4-sulfonate) 26009-24-5, Poly(1,4-phenylene-1,2-ethenediyl)  
 RL: DEV (Device component use); USES (Uses)  
 (electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)
- IT 190785-26-3P 190785-27-4P 190785-29-6P 190785-30-9P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)
- IT 602-55-1, 9-Phenylanthracene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)
- IT 190785-23-OP  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)
- IT 95-12-5, 5-Norbornene-2-methanol 589-15-1, 4-Bromobenzyl bromide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer synthesis; electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)
- IT 124454-24-6P 190785-19-4P, (5-Norbornenyl)methyl p-bromobenzyl Ether 190785-20-7P 190785-22-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer synthesis; electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)
- IT 23674-20-6P, 9-Bromo-10-phenylanthracene 190785-21-8P 190785-24-1P 190785-25-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)
- IT 126949-65-3  
 RL: CAT (Catalyst use); USES (Uses)  
 (polymerization catalyst; electroluminescence from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

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L108 ANSWER 1 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2005:98918 Document No. 142:207346 Organic light-emitting devices using aromatic hydrocarbon materials in enhancement layers for assisting electron injection. Thompson, Mark E.; Kwong, Raymond; Tung, Yeh-Jiun; Brooks, Jason (USA). U.S. Pat. Appl. Publ. US 2005025993 A1 20050203, 47 pp., Cont.-in-part of U.S. Ser. No. 626,579. (English). CODEN: USXXCO. APPLICATION: US 2004-785287 20040223. PRIORITY: US 2003-626579 20030725.

IT 120-12-7, Anthracene, uses 120-12-7D, Anthracene,

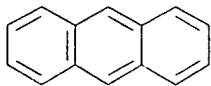
derivs.

RL: DEV (Device component use); USES (Uses)

(organic light-emitting devices using  
aromatic hydrocarbon materials in enhancement layers for assisting  
electron injection)

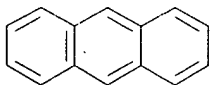
RN 120-12-7 HCAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)



RN 120-12-7 HCAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H05B033-12

INCL 428690000; 428917000; 313504000; 313506000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

Section cross-reference(s): 22, 25, 76

ST org emitting device arom hydrocarbon electron  
injection enhancement

IT Electroluminescent devices

(organic light-emitting devices using  
aromatic hydrocarbon materials in enhancement layers for assisting  
electron injection)

IT 94928-86-6, Tris(2-phenylpyridine)iridium

RL: DEV (Device component use); USES (Uses)

(carbazolylbiphenyl doped with; organic light-  
emitting devices using aromatic hydrocarbon  
materials in enhancement layers for assisting electron  
injection)

IT 58328-31-7, 4,4'-Bis(N-carbazolyl)biphenyl

RL: DEV (Device component use); USES (Uses)

(emitter-doped; organic light-emitting  
devices using aromatic hydrocarbon materials in enhancement  
layers for assisting electron injection)

IT 85-01-8, Phenanthrene, uses 85-01-8D, Phenanthrene, derivs.

86-73-7, 9H-Fluorene 86-73-7D, 9H-Fluorene, derivs., oligomers

91-20-3, Naphthalene, uses 91-20-3D, Naphthalene, derivs.

120-12-7, Anthracene, uses 120-12-7D, Anthracene,

derivs. 129-00-0, Pyrene, uses 129-00-0D, Pyrene, derivs.

198-55-0, Perylene 198-55-0D, Perylene, derivs. 751-38-2

751-38-2D, derivs. 97388-42-6D, derivs. 518997-91-6

518997-91-6D, derivs.

RL: DEV (Device component use); USES (Uses)

(organic light-emitting devices using  
aromatic hydrocarbon materials in enhancement layers for assisting  
electron injection)

IT 217-59-4, Triphenylene

RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or  
reagent); USES (Uses).

(organic light-emitting devices using  
aromatic hydrocarbon materials in enhancement layers for assisting  
electron injection)

IT 97388-42-6P 836671-27-3P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (organic light-emitting devices using aromatic hydrocarbon materials in enhancement layers for assisting electron injection)

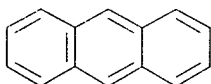
IT 98-80-6, Phenylboronic acid 448-61-3, 2,4,6-Triphenylpyrylium tetrafluoroborate 1310-73-2, Sodium hydroxide, reactions 5728-52-9, 4-Biphenylacetic acid 7726-95-6, Bromine, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (organic light-emitting devices using aromatic hydrocarbon materials in enhancement layers for assisting electron injection)

IT 80726-63-2P 82632-80-2P, 2,3,6,7,10,11-Hexabromotriphenylene  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (organic light-emitting devices using aromatic hydrocarbon materials in enhancement layers for assisting electron injection)

L108 ANSWER 2 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2004:1035148 Document No. 142:30790 **Hole transport material and method of manufacturing the hole transport material.** Shinohara, Yuji; Ishii, Ryuji; Shimazu, Masamitsu; Uehara, Masamitsu (Seiko Epson Corporation, Japan). Eur. Pat. Appl. EP 1482576 A2 20041201, 32 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR. (English). CODEN: EPXXDW. APPLICATION: EP 2004-253063 20040525. PRIORITY: JP 2003-153539 20030529; JP 2003-206953 20030808.

IT 120-12-7D, Anthracene, derivs.  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (hole transport material; hole transport material and method of manufacturing the hole transport material)

RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H01L051-30  
 CC 76-2 (Electric Phenomena)  
 Section cross-reference(s): 73

ST **hole transport material**  
**electroluminescent device**

IT Amines, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (aromatic, hole transport material; hole transport material and method of manufacturing the hole transport material)

IT Cycloalkanes  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (aryl, hole transport material; hole transport material and method of manufacturing the hole transport material)

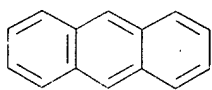
IT **Electroluminescent devices**  
 (hole transport material and method of manufacturing the hole transport material)

IT Polyanilines  
 Porphyrins  
 Silanes  
 RL: TEM (Technical or engineered material use); USES (Uses)

- (hole transport material; hole transport material and method of manufacturing the hole transport material)
- IT **Hole transport**  
(materials for; hole transport material and method of manufacturing the hole transport material)
- IT **Conducting polymers**  
(polyanilines; hole transport material and method of manufacturing the hole transport material)
- IT 62-53-3D, Aniline, derivs. 86-73-7D, Fluorene, derivs. 86-74-8D, Carbazole, derivs. 109-97-7D, Pyrrole, derivs. 110-02-1D, Thiophene, derivs. 120-12-7D, Anthracene, derivs. 288-32-4D, Imidazole, derivs. 288-42-6D, Oxazole, derivs. 486-25-9D, Fluorenone, derivs. 519-73-3D, Triphenylmethane, derivs. 574-93-6D, Phthalocyanine, derivs. 588-59-0D, Stilbene, derivs. 1047-16-1D, Quinacridone, derivs. 11120-54-0D, Oxadiazole, derivs. 15546-43-7 23627-89-6D, Naphthalocyanine, derivs. 25265-76-3D, Phenylenediamine, derivs. 29797-09-9D, Cyclohexadiene, derivs. 36118-45-3D, Pyrazoline, derivs. 37306-44-8D, Triazole, derivs. 123847-85-8 155090-83-8, Baytron P
- RL: TEM (Technical or engineered material use); USES (Uses)  
(hole transport material; hole transport material and method of manufacturing the hole transport material)

L108 ANSWER 3 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:929841 Document No. 142:165163 Organic red light-emitting material and organic electroluminescent device using the same. Han, Yun Su (Lg Electronics Inc., S. Korea). Repub. Korean Kongkae Taeho Kongbo KR 2002078264 A 20021018, No pp. given (Korean). CODEN: KRXXA7. APPLICATION: KR 2001-18326 20010406.

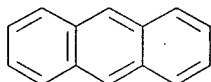
- IT 120-12-7D, Anthracene, phenothiazine derivs.  
RL: DEV (Device component use); USES (Uses)  
(organic red light emitting material containing  $\pi$ -conjugated phenothiazine and anthracene groups and organic electroluminescent device using the same)
- RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- IC ICM C09K011-06  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST org red light emitting material phenothiazine anthracene
- IT **Luminescent substances**  
(electroluminescent; organic red light emitting material containing  $\pi$ -conjugated phenothiazine and anthracene groups and organic electroluminescent device using the same)
- IT **Electroluminescent devices**  
(organic red light emitting material containing  $\pi$ -conjugated phenothiazine and anthracene groups and organic electroluminescent device using the same)
- IT 92-84-2D, 10H-Phenothiazine, anthracene derivs. 120-12-7D, Anthracene, phenothiazine derivs.

RL: DEV (Device component use); USES (Uses)  
 (organic red **light emitting** material containing  
 $\pi$ -conjugated phenothiazine and anthracene groups and organic  
 electroluminescent device using the same)

L108 ANSWER 4 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2004:641250 Document No. 141:322236 Decay mechanisms of a blue organic  
**light emitting diode**. Ni, S. Y.; Wang, X. R.; Wu,  
 Y. Z.; Chen, H. Y.; Zhu, W. Q.; Jiang, X. Y.; Zhang, Z. L.; Sun, R.  
 G. (Department of Materials Science, Shanghai University, Shanghai,  
 201800, Peop. Rep. China). Applied Physics Letters, 85(6), 878-880  
 (English) 2004. CODEN: APPLAB. ISSN: 0003-6951. Publisher:  
 American Institute of Physics.  
 IT 120-12-7D, Anthracene, derivs.  
 RL: DEV (Device component use); USES (Uses)  
 (decay mechanisms of blue organic **light emitting**  
 diode).  
 RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



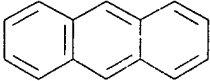
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 76  
 ST decay **electroluminescence** current voltage stress LED org  
 IT Interface  
 (breakdown of interfaces in **device** for decay mechanisms  
 of blue org.**light emitting diode**)  
 IT Current efficiency  
 Electric current-potential relationship  
**Electroluminescent devices**  
**Luminescence**  
**Luminescence, electroluminescence**  
 (decay mechanisms of blue organic **light emitting**  
 diode)  
 IT Stress, mechanical  
 (effect on electrooptical characteristics of **LED**  
**device**)  
 IT 120-12-7D, Anthracene, derivs. 147-14-8, Copper  
 phthalocyanine 2085-33-8, Alq3 37271-44-6 50926-11-9, Indium  
 tin oxide 123847-85-8,  $\alpha$ -NPD  
 RL: DEV (Device component use); USES (Uses)  
 (decay mechanisms of blue organic **light emitting**  
 diode)  
 IT 198-55-0, Perylene  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (decay mechanisms of blue organic **light emitting**  
 diode)

L108 ANSWER 5 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2004:142647 Document No. 140:171909 Organic white-light-  
**emitting** blend materials and **electroluminescent**  
**devices** fabricated using the same. Kim, Young-Chul; Cho,  
 Hyun-Nam; Lee, Tae-Woo; Park, O-Ok; Kim, Jai-Kyeong; Yu, Jae-Woong  
 (Korea Institute of Science and Technology, S. Korea). U.S. Pat.  
 Appl. Publ. US 2004033388 A1 20040219, 15 pp. (English). CODEN:  
 USXXCO. APPLICATION: US 2003-635591 20030805. PRIORITY: KR  
 2002-48739 20020817.  
 IT 120-12-7D, Anthracene, derivs.



RL: DEV (Device component use); USES (Uses)  
 (light-emitting material; organic white-  
 light-emitting blend materials and  
 electroluminescent devices using Forster energy  
 transfer)

RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)

IC ICM H05B033-14  
 ICS C09K011-06

INCL 428690000; 428917000; 313504000; 313506000; 252301160; 252301350

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 76

ST phosphor blend white light LED fabrication Forster energy  
 transfer

IT Energy transfer  
 (Forster; organic white-light-emitting blend  
 materials and electroluminescent devices  
 using Forster energy transfer)

IT Amines, uses  
 RL: DEV (Device component use); USES (Uses)  
 (aryl, tertiary, hole transporting layer;  
 organic white-light-emitting blend materials and  
 electroluminescent devices using Forster energy  
 transfer)

IT Polyacetylenes, uses  
 RL: DEV (Device component use); USES (Uses)  
 (derivs., light-emitting material; organic  
 white-light-emitting blend materials and  
 electroluminescent devices using Forster energy  
 transfer)

IT Polyquinolines  
 RL: DEV (Device component use); USES (Uses)  
 (light-emitting material; organic white-  
 light-emitting blend materials and  
 electroluminescent devices using Forster energy  
 transfer)

IT Electroluminescent devices  
 Phosphors  
 (organic white-light-emitting blend materials  
 and electroluminescent devices using Forster  
 energy transfer)

IT Polyquinoxalines  
 RL: DEV (Device component use); USES (Uses)  
 (polyphenylquinoxalines, electron transporting  
 layer; organic white-light-emitting blend  
 materials and electroluminescent devices  
 using Forster energy transfer)

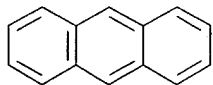
IT Polyesters, uses  
 RL: DEV (Device component use); USES (Uses)  
 (translucent electrode; organic white-light-  
 emitting blend materials and electroluminescent  
 devices using Forster energy transfer)

IT Light  
 (white; organic white-light-emitting blend  
 materials and electroluminescent devices  
 using Forster energy transfer)

IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7439-95-4,

- Magnesium, uses 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-70-2, Calcium, uses 7789-24-4, Lithium fluoride (LiF), uses  
 RL: DEV (Device component use); USES (Uses)  
 (electrode; organic white-light-emitting blend materials and electroluminescent devices using Forster energy transfer)
- IT 2085-33-8, Alq3 192198-85-9, TPBI 203915-07-5 302921-88-6  
 RL: DEV (Device component use); USES (Uses)  
 (electron transporting layer; organic white-light-emitting blend materials and electroluminescent devices using Forster energy transfer)
- IT 25067-59-8, Polyvinylcarbazole 36118-45-3, Pyrazoline 58328-31-7 65181-78-4, (N,N'-Diphenyl-N,N'-bis-(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine) 123847-85-8  
 RL: DEV (Device component use); USES (Uses)  
 (hole transporting layer; organic white-light-emitting blend materials and electroluminescent devices using Forster energy transfer)
- IT 120-12-7D, Anthracene, derivs. 198-55-0D, Perylene, derivs. 517-51-1D, Rubrene, derivs. 7385-67-3D, Nile Red, derivs. 7631-86-9, Silica, uses 25067-58-7D, Polyacetylene, derivs. 25067-59-8D, Poly(9-vinyl carbazole), derivs. 25190-62-9D, Poly(p-phenylene), derivs. 25233-34-5D, Polythiophene, derivs. 26009-24-5D, Poly(p-phenylenevinylene), derivs. 30604-81-0D, Polypyrrole, derivs. 38215-36-0D, Coumarin 6, derivs. 51325-91-8D, DCM, derivs. 65181-78-4D, TPD, derivs. 95270-88-5D, Polyfluorene, derivs. 150405-69-9D, TAZ, derivs. 188547-07-1 222852-37-1 270252-33-0  
 RL: DEV (Device component use); USES (Uses)  
 (light-emitting material; organic white-light-emitting blend materials and electroluminescent devices using Forster energy transfer)
- IT 138184-36-8, (Poly[2-methoxy-5-(2'-ethyl-hexyloxy)-1,4-phenylenevinylene])  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (light-emitting material; organic white-light-emitting blend materials and electroluminescent devices using Forster energy transfer)
- IT 25038-59-9, Polyethylene terephthalate, uses 25233-30-1, Polyaniline. 50926-11-9, Indium tin oxide 126213-51-2, PEDOT  
 RL: DEV (Device component use); USES (Uses)  
 (translucent electrode; organic white-light-emitting blend materials and electroluminescent devices using Forster energy transfer)
- L108 ANSWER 6 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2004:3521 Document No. 140:67414 Organic electroluminescent devices with light-emitting layer made of mixture of an optically active low molecular electric charge transport material and a high molecular light-emitting substance. Chin, Byung Doo; Suh, Min Chul; Kim, Mu Hyun; Lee, Seong Taek; Kwon, Jang Hyuk (Samsung Sdi Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2004001972 A1 20040101, 9 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-421754 20030424. PRIORITY: KR 2002-36558 20020628.
- IT 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); USES (Uses)  
 (light-emitting material; organic electroluminescent devices with light-emitting layer made of mixture of optically active low

mol. elec. charge transport material and high  
mol. light-emitting substance)  
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H05B033-14  
ICS B32B009-00  
INCL 428690000; 428917000; 313504000; 313506000  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 22, 36, 38, 76  
ST org electroluminescent device charge  
transport material high mol; donor film  
electroluminescent material laser thermal imaging  
IT Amines, uses  
RL: DEV (Device component use); USES (Uses)  
(aromatic, charge transport material; organic  
electroluminescent devices with light  
-emitting layer made of mixture of optically active low  
mol. elec. charge transport material and high  
mol. light-emitting substance)  
IT Electric conductors  
(charge-transport materials; organic  
electroluminescent devices with light  
-emitting layer made of mixture of optically active low  
mol. elec. charge transport material and high  
mol. light-emitting substance)  
IT Films  
(donor films for laser-induced thermal imaging; organic  
electroluminescent devices with light  
-emitting layer made of mixture of optically active low  
mol. elec. charge transport material and high  
mol. light-emitting substance)  
IT Luminescent substances  
(electroluminescent; organic  
electroluminescent devices with light  
-emitting layer made of mixture of optically active low  
mol. elec. charge transport material and high  
mol. light-emitting substance)  
IT Polyimides, uses  
RL: DEV (Device component use); USES (Uses)  
(fluoride, optically inert matrix; organic  
electroluminescent devices with light  
-emitting layer made of mixture of optically active low  
mol. elec. charge transport material and high  
mol. light-emitting substance)  
IT Polycarbonates, uses  
Polyesters, uses  
Polyoxyphenylenes  
RL: DEV (Device component use); USES (Uses)  
(optically inert matrix; organic electroluminescent  
devices with light-emitting layer  
made of mixture of optically active low mol. elec. charge  
transport material and high mol. light-  
emitting substance)  
IT Electroluminescent devices  
(organic electroluminescent devices with  
light-emitting layer made of mixture of optically  
active low mol. elec. charge transport

- material and high mol. **light-emitting** substance)
- IT Polymers, uses  
 RL: DEV (Device component use); USES (Uses)  
 (polysulfonates, optically inert matrix; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low mol. elec. **charge transport** material and high mol. **light-emitting** substance)
- IT Dendritic polymers  
 RL: DEV (Device component use); USES (Uses)  
 (starburst, **charge transport** material; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low mol. elec. **charge transport** material and high mol. **light-emitting** substance)
- IT Polyesters, uses  
 RL: DEV (Device component use); USES (Uses)  
 (sulfonated, optically inert matrix; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low mol. elec. **charge transport** material and high mol. **light-emitting** substance)
- IT Imaging  
 (thermal, donor films for laser-induced; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low mol. elec. **charge transport** material and high mol. **light-emitting** substance)
- IT Acrylic polymers, uses  
 Fluoropolymers, uses  
 RL: DEV (Device component use); USES (Uses)  
 (transparent optically inert matrix; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low mol. elec. **charge transport** material and high mol. **light-emitting** substance)
- IT 86-74-8D, Carbazole, derivs. 11120-54-0D, Oxadiazole, derivs. 123847-85-8  
 RL: DEV (Device component use); USES (Uses)  
 (**charge transport** material; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low mol. elec. **charge transport** material and high mol. **light-emitting** substance)
- IT 58328-31-7  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (**charge transport** material; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low mol. elec. **charge transport** material and high mol. **light-emitting** substance)
- IT 155090-83-8, PEDOT-PSS  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (**hole-injecting** layer; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low mol. elec. **charge transport** material and high mol. **light-emitting** substance)
- IT 86-73-7, Fluorene 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); USES (Uses)  
 (**light-emitting** material; organic **electroluminescent devices with light** -emitting layer made of mixture of optically active low

- mol. elec. charge transport material and high  
mol. light-emitting substance)
- IT 95270-88-5, Polyfluorene 96638-49-2, Poly phenylene vinylene  
RL: DEV (Device component use); USES (Uses)  
(light-emitting substance; organic  
electroluminescent devices with light  
-emitting layer made of mixture of optically active low  
mol. elec. charge transport material and high  
mol. light-emitting substance)
- IT 9003-42-3, Polyethyl methacrylate 9003-47-8, Poly(vinyl pyridine)  
9010-92-8, Styrene-methacrylic acid copolymer 9011-14-7,  
Polymethyl methacrylate 25014-31-7, Poly( $\alpha$ -methylstyrene)  
25034-86-0, Styrene-methyl methacrylate copolymer 25038-59-9,  
Polyethyleneterephthalate, uses 106107-54-4, Styrene-butadiene  
block copolymer  
RL: DEV (Device component use); USES (Uses)  
(optically inert matrix; organic electroluminescent  
devices with light-emitting layer  
made of mixture of optically active low mol. elec. charge  
transport material and high mol. light-  
emitting substance)
- IT 9003-53-6, Polystyrene 24936-41-2, Poly(4-methylstyrene)  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(optically inert matrix; organic electroluminescent  
devices with light-emitting layer  
made of mixture of optically active low mol. elec. charge  
transport material and high mol. light-  
emitting substance)
- IT 639512-15-5, Covion Green  
RL: DEV (Device component use); PEP (Physical, engineering or  
chemical process); PRP (Properties); PYP (Physical process); PROC  
(Process); USES (Uses)  
(organic electroluminescent devices with  
light-emitting layer made of mixture of optically  
active low mol. elec. charge transport  
material and high mol. light-emitting  
substance)
- IT 639505-27-4, Green K 2 639508-40-0, BF-E 639512-82-6, Blue J  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(organic electroluminescent devices with  
light-emitting layer made of mixture of optically  
active low mol. elec. charge transport  
material and high mol. light-emitting  
substance)
- IT 139092-78-7 220865-73-6 220901-77-9  
RL: DEV (Device component use); USES (Uses)  
(starburst, charge transport material; organic  
electroluminescent devices with light  
-emitting layer made of mixture of optically active low  
mol. elec. charge transport material and high  
mol. light-emitting substance)

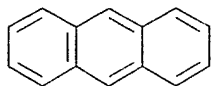
L108 ANSWER 7 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:852874 Document No. 139:343296 Efficient

electroluminescent device. Brown, Christopher T.;  
Kondakov, Denis Y. (Eastman Kodak Company, USA). Eur. Pat. Appl. EP  
1357613 A2 20031029, 36 pp. DESIGNATED STATES: R: AT, BE, CH, DE,  
DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI,  
RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW.  
APPLICATION: EP 2003-76076 20030414. PRIORITY: US 2002-131011  
20020424.

- IT 120-12-7D, Anthracene, derivs.  
RL: DEV (Device component use); USES (Uses)  
(host for light emitting layer;  
electroluminescent device using indenoperylene  
compound)

RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H01L051-30  
 ICS H01L051-20  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 76  
 ST **electroluminescent device** indenoperylene  
 IT **Electroluminescent devices**  
 (electroluminescent device using indenoperylene compound)  
 IT 37271-44-6  
 RL: DEV (Device component use); USES (Uses)  
 (electrode; **electroluminescent device** using indenoperylene compound)  
 IT 2085-33-8, Alq3 50926-11-9, Indium tin oxide 146162-54-1  
 192198-85-9, TPBI  
 RL: DEV (Device component use); USES (Uses)  
 (electroluminescent device using indenoperylene compound)  
 IT 616235-14-4P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (electroluminescent device using indenoperylene compound)  
 IT 13922-41-3, 1-Naphthyl boronic acid 187086-32-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (electroluminescent device using indenoperylene compound)  
 IT 51311-17-2, Carbon fluoride  
 RL: DEV (Device component use); USES (Uses)  
 (hole-injecting layer; **electroluminescent device** using indenoperylene compound)  
 IT 123847-85-8, [1,1'-Biphenyl]-4,4'-diamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl-  
 RL: DEV (Device component use); USES (Uses)  
 (hole-transporting layer; **electroluminescent device** using indenoperylene compound)  
 IT 120-12-7D, Anthracene, derivs.  
 RL: DEV (Device component use); USES (Uses)  
 (host for **light emitting** layer; **electroluminescent device** using indenoperylene compound)  
 IT 616235-15-5P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (light emitting layer; **electroluminescent device** using indenoperylene compound)  
 IT 274905-73-6, 2-tert-Butyl-9,10-di(2-naphthyl)anthracene  
 RL: DEV (Device component use); USES (Uses)  
 (light-emitting layer; **electroluminescent device** using indenoperylene compound)

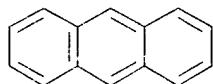
L108 ANSWER 8 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:373895 Document No. 138:392821 Organic light emitting devices. Aziz, Hany; Hu, Nan-Xing; Hor, Ah-Mee; Popovic, Zoran D. (Xerox Corporation, USA). Eur. Pat. Appl. EP 1311009 A2 20030514, 31 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2002-25109 20021108. PRIORITY: US 2001-5930 20011108.

IT 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic light-emitting devices)

RN 120-12-7 HCAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H01L051-20

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 74, 76

ST org light emitting device

IT Polyenes  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (conjugated; organic light-emitting devices)

IT Rare earth compounds  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic light-emitting devices)

IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-hydroxyquinoline)aluminum 31274-51-8 123847-85-8, N,N'-Di(naphthalen-1-yl)-N,N'-diphenylbenzidine 134008-76-7 166036-16-4 166036-17-5 221544-72-5 221544-76-9 266349-83-1 266349-84-2 266349-85-3 266349-86-4 336624-16-9 444716-92-1  
 RL: DEV (Device component use); USES (Uses)  
 (organic light-emitting devices)

IT 85-01-8, Phenanthrene, uses 91-64-5, Coumarin 92-83-1, Xanthene 106-99-0, Butadiene, uses 120-12-7, Anthracene, uses 129-00-0, Pyrene, uses 191-07-1, Coronene 198-55-0, Perylene 289-67-8, Pyrylium 517-51-1, Rubrene 578-95-0, Acridone 588-59-0, Stilbene 1047-16-1, Quinacridone 19205-19-7, N,N'-Dimethylquinacridone 31248-39-2 155306-71-1 200052-70-6  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic light-emitting devices)

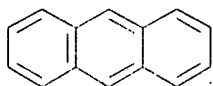
L108 ANSWER 9 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:355664 Document No. 138:376116 Organic light emitting devices. Aziz, Hany; Hu, Nan-Xing; Vong, Cuong; Hor, Ah-Mee; Popovic, Zoran D. (Xerox Corporation, USA). U.S. Pat. Appl. Publ. US 2003087125 A1 20030508, 21 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-5993 20011108.

IT 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic light-emitting devices with light-emitting regions comprising mixts. containing N,N'-bis(p-biphenyl)-N,N'-diphenyl benzidine)

RN 120-12-7 HCAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)



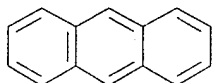
IC ICM H05B033-12  
 INCL 428690000; 428917000; 428213000; 428332000; 313504000; 313506000  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 76  
 ST org light emitting device mixed active region  
 IT Polyenes  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (conjugated; organic light-emitting devices with light-emitting regions comprising mixts. containing N,N'-bis(p-biphenyl)-N,N'-diphenyl benzidine)  
 IT Rare earth complexes  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic light-emitting devices with light-emitting regions comprising mixts. containing N,N'-bis(p-biphenyl)-N,N'-diphenyl benzidine)  
 IT Electroluminescent devices  
 (organic; organic light-emitting devices with light-emitting regions comprising mixts. containing N,N'-bis(p-biphenyl)-N,N'-diphenyl benzidine)  
 IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-hydroxyquinoline)aluminum 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 31274-51-8 50926-11-9, Indium tin oxide 134008-76-7 166036-16-4 166036-17-5 221544-72-5 221544-76-9 224785-36-8 266349-83-1 266349-84-2 266349-85-3 266349-86-4 336624-16-9  
 RL: DEV (Device component use); USES (Uses)  
 (organic light-emitting devices with light-emitting regions comprising mixts. containing N,N'-bis(p-biphenyl)-N,N'-diphenyl benzidine)  
 IT 59-31-4, Carbostryl 85-01-8, Phenanthrene, uses 91-64-5, Coumarin 92-83-1, Xanthene 106-99-0, Butadiene, uses 120-12-7, Anthracene, uses 129-00-0, Pyrene, uses 191-07-1, Coronene 198-55-0, Perylene 289-67-8, Pyrylium 517-51-1, Rubrene 578-95-0, Acridone 588-59-0, Stilbene 1047-16-1, Quinacridone 1470-04-8 1884-65-7, Dicyanomethylene 19205-19-7, N,N'-Dimethylquinacridone 31248-39-2 94928-86-6, Fac-Tris(2-phenylpyridine)iridium 155306-71-1 200052-70-6 521964-62-5  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic light-emitting devices with light-emitting regions comprising mixts. containing N,N'-bis(p-biphenyl)-N,N'-diphenyl benzidine)

L108 ANSWER 10 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2003:259840 Document No. 138:294686 Organic light-emitting diodes having an interface layer between the hole-transporting layer and the light-emitting layer. Liao, L. S.; Madathil, J. K.; Klubek, K. P.; Tang, C. W. (Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1298737 A2 20030402, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI,

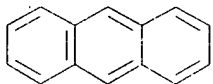


RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW.  
APPLICATION: EP 2002-78794 20020916. PRIORITY: US 2001-966618  
20010928.

IT 120-12-7D, Anthracene, derivs.  
RL: DEV (Device component use); USES (Uses)  
(interfacial layer; organic **light-emitting**  
diodes having interface layer between **hole-**  
**transporting** layer and **light-emitting**  
layer)  
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IT 120-12-7, Anthracene, properties  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(interfacial layer; organic **light-emitting**  
diodes having interface layer between **hole-**  
**transporting** layer and **light-emitting**  
layer)  
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H01L051-20  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)  
Section cross-reference(s): 22, 76  
ST org **electroluminescent device** interfacial layer  
**hole transporting luminescent;**  
OLED interface layer ionization potential bandgap  
IT **Electroluminescent devices**  
(organic **light-emitting** diodes having interface  
layer between **hole-transporting** layer and  
**light-emitting** layer)  
IT 274905-73-6  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(doped **luminescent** layer; organic **light**  
**-emitting** diodes having interface layer between  
**hole-transporting** layer and **light-**  
**emitting** layer)  
IT 2085-33-8, Alq3  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(**electron-transporting** and **light-**  
**emitting** layer; organic **light-emitting**  
diodes having interface layer between **hole-**  
**transporting** layer and **light-emitting**  
layer)  
IT 123847-85-8, NPB  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(**hole-transporting** layer; organic **light**  
**-emitting** diodes having interface layer between  
**hole-transporting** layer and **light-**  
**emitting** layer)  
IT 120-12-7D, Anthracene, derivs. 26140-60-3D, Terphenyl,

derivs.

RL: DEV (Device component use); USES (Uses)  
(interfacial layer; organic light-emitting  
diodes having interface layer between hole-  
transporting layer and light-emitting  
layer)

IT 92-94-4, p-Terphenyl 120-12-7, Anthracene, properties  
135-70-6, p-Quaterphenyl 3073-87-8, 2,2'-p-Phenylenebis(4-methyl-5-  
phenyloxazole) 214078-86-1 462104-51-4

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(interfacial layer; organic light-emitting  
diodes having interface layer between hole-  
transporting layer and light-emitting  
layer)

IT 80663-92-9, 2,5,8,11-Tetra-tert-butylperylene 155306-71-1, C 545T  
200052-70-6, DCJTB

RL: DEV (Device component use); MOA (Modifier or additive use); PRP  
(Properties); USES (Uses)  
(luminescent dopant; organic light-  
emitting diodes having interface layer between  
hole-transporting layer and light-  
emitting layer)

L108 ANSWER 11 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:150670 Document No. 138:195634 Organic light-  
emitting device having a color-neutral dopant.

Hatwar, Tukaram Kisan; Young, Ralph H. (Eastman Kodak Company, USA).

Eur. Pat. Appl. EP 1286568 A1 20030226, 22 pp. DESIGNATED STATES:

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English).

CODEN: EPXXDW. APPLICATION: EP 2002-78047 20020725. PRIORITY: US  
2001-923024 20010806.

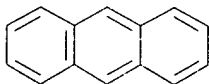
IT 120-12-7D, Anthracene, derivs.

RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)

(organic light-emitting devices having  
color-neutral dopant in the emission and hole-  
transport or electron-transport  
layers)

RN 120-12-7 HCAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

Section cross-reference(s): 76

ST light emitting device color neutral

dopant hole electron transport

IT Electroluminescent devices

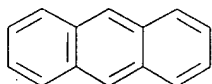
(organic light-emitting devices having  
color-neutral dopant in the emission and hole-  
transport or electron-transport  
layers)

IT 122648-99-1

RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)

(color-neutral dopant; organic light-emitting  
devices having color-neutral dopant in the emission and

- hole-transport or electron-transport layers)
- IT 2085-33-8, Alq3  
RL: DEV (Device component use); USES (Uses)  
(electron transport layer; organic light-emitting devices having color-neutral dopant in the emission and hole-transport or electron-transport layers)
- IT 274905-73-6  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(emission layer; organic light-emitting devices having color-neutral dopant in the emission and hole-transport or electron-transport layers)
- IT 123847-85-8, NPB  
RL: DEV (Device component use); USES (Uses)  
(hole-transport layer; organic light-emitting devices having color-neutral dopant in the emission and hole-transport or electron-transport layers)
- IT 14514-42-2 14642-34-3 67952-28-7  
RL: DEV (Device component use); USES (Uses)  
(organic light-emitting devices having color-neutral dopant in the emission and hole-transport or electron-transport layers)
- IT 120-12-7D, Anthracene, derivs.  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(organic light-emitting devices having color-neutral dopant in the emission and hole-transport or electron-transport layers)
- L108 ANSWER 12 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
2003:92432 Document No. 138:144835 **Light-emitting device** with organic layer doped with photoluminescent material. Duggal, Anil Raj; Srivastava, Alok Mani; Duclos, Steven Jude (General Electric Company, USA). U.S. US 6515314 B1 20030204, 13 pp. (English). CODEN: USXXAM. APPLICATION: US 2000-713394 20001116.
- IT 120-12-7, Anthracene, uses  
RL: DEV (Device component use); USES (Uses)  
(organic light emitting material; light-emitting device with organic layer doped with phosphor fabricated by using)
- RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)

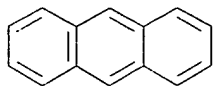


- IC ICM H01L031-072  
INCL 257184000; 257040000; 257089000; 257098000; 257103000; 313501000; 313503000; 313506000; 313507000  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 22, 38, 76  
ST **light emitting device org phosphor**  
IT Polymers, uses

- RL: DEV (Device component use); USES (Uses)  
(alkyl fluorene; **light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT Metal alkoxides  
RL: DEV (Device component use); USES (Uses)  
(aluminum, organic **light emitting material**, alkyl phenoxide; **light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT **Electroluminescent devices**  
(**light-emitting device** with organic layer doped with **phosphor**)
- IT Ink-jet printing  
(**light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT Phenols, uses  
RL: DEV (Device component use); USES (Uses)  
(metal salts, organic **light emitting material**; **light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT Polysilanes  
RL: DEV (Device component use); USES (Uses)  
(organic **light emitting material**; **light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT 1312-43-2, Indium oxide 1314-13-2, Zinc oxide, uses 1332-29-2, Tin oxide 50926-11-9, Indium tin oxide 117944-65-7, Indium zinc oxide  
RL: DEV (Device component use); USES (Uses)  
(**anode**; **light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT 7429-90-5, Aluminum, uses 7439-91-0, Lanthanum, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-09-7, Potassium, uses 7440-22-4, Silver, uses 7440-23-5, Sodium, uses 7440-24-6, Strontium, uses 7440-31-5, Tin, uses 7440-39-3, Barium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses  
RL: DEV (Device component use); USES (Uses)  
(**cathode**; **light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT 86-73-7D, Fluorene, nitro derivative 91-19-0D, Quinoxaline, derivs. 91-22-5D, Quinoline, derivs. 844-51-9D, derivs. 2085-33-8, Tris(8-quinolinolato)aluminum 11120-54-0D, Oxadiazole, derivs.  
RL: DEV (Device component use); USES (Uses)  
(**electron injection material**; **light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT 128-69-8, 3,4,9,10-Perylenetetra-carboxylic dianhydride 135704-54-0  
RL: DEV (Device component use); USES (Uses)  
(**hole injection material**; **light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT 25067-59-8, Poly(N-vinylcarbazole)  
RL: DEV (Device component use); USES (Uses)  
(**light-emitting device** with organic layer doped with **phosphor** fabricated by using)
- IT 91-64-5, Coumarin 106-99-0D, Butadiene, tetra-Ph 120-12-7, Anthracene, uses 191-07-1, Coronene 198-55-0, Perylene 517-51-1, Rubrene 632-51-9 7440-20-2D, Scandium, alkylphenoxide 7440-55-3D, Gallium, alkylphenoxide 7440-74-6D, Indium, alkylphenoxide 13963-57-0, Tris(acetylacetonate)aluminum 14284-94-7, Tris(acetylacetonato)scandium 14405-43-7,

- Tris(acetylacetonate)gallium 14405-45-9,  
 Tris(acetylacetonato)indium 25190-62-9, Poly(1,4-phenylene)  
 28802-91-7, Phenylanthracene 153521-90-5, 1,3,5-Tris[N-(4-  
 diphenylaminophenyl)phenylamino] benzene  
 RL: DEV (Device component use); USES (Uses)  
 (organic **light emitting** material; **light**  
**-emitting device** with organic layer doped with  
**phosphor** fabricated by using)
- IT 1309-48-4, Magnesium oxide, uses  
 RL: DEV (Device component use); USES (Uses)  
 (**phosphor**, mixture of germanium oxide and fluoride;  
**light-emitting device** with organic layer  
 doped with **phosphor** fabricated by using)
- IT 1310-53-8, Germanium oxide (GeO<sub>2</sub>), uses  
 RL: DEV (Device component use); USES (Uses)  
 (**phosphor**, mixture of magnesium oxide and fluoride;  
**light-emitting device** with organic layer  
 doped with **phosphor** fabricated by using)
- IT 7783-40-6, Magnesium fluoride  
 RL: DEV (Device component use); USES (Uses)  
 (**phosphor**, mixture of magnesium oxide and germanium  
 oxide; **light-emitting device** with  
 organic layer doped with **phosphor** fabricated by using)
- IT 1314-36-9, Yttrium oxide (Y<sub>2</sub>O<sub>3</sub>), uses 7440-27-9, Terbium, uses  
 7440-45-1, Cerium, uses 11088-40-7, Strontium chloride phosphate  
 (Sr<sub>5</sub>Cl(PO<sub>4</sub>)<sub>3</sub>) 12005-21-9, Aluminum yttrium oxide (Al<sub>5</sub>Y<sub>3</sub>O<sub>12</sub>)  
 12027-88-2, Yttrium silicate (Y<sub>2</sub>SiO<sub>5</sub>) 13709-90-5, Gadolinium  
 borate (GdBO<sub>3</sub>) 18923-26-7, Cerium(3+), uses 20644-06-8,  
 Magnesium strontium pyrophosphate (MgSrP<sub>2</sub>O<sub>7</sub>) 22541-20-4,  
 Terbium(3+), uses 55070-88-7, Aluminum cerium magnesium oxide  
 (Al<sub>11</sub>CeMgO<sub>19</sub>) 55134-50-4, Aluminum barium magnesium oxide  
 (Al<sub>16</sub>BaMg<sub>2</sub>O<sub>27</sub>) 99533-22-9, Calcium magnesium chloride silicate  
 (Ca<sub>8</sub>MgCl<sub>2</sub>(SiO<sub>4</sub>)<sub>4</sub>) 352033-92-2 494201-96-6, Aluminum cerium  
 gadolinium yttrium oxide (Al<sub>5</sub>(Ce,Gd,Y)<sub>3</sub>O<sub>12</sub>) 494201-97-7, Aluminum  
 cerium gallium yttrium oxide ((Al,Ga)<sub>5</sub>(Ce,Y)<sub>3</sub>O<sub>12</sub>) 494201-98-8  
 494201-99-9, Gadolinium vanadium yttrium borate oxide  
 ((Gd,Y)V<sub>2</sub>O<sub>10</sub>(BO<sub>3</sub>)<sub>2</sub>) 101-4)  
 RL: DEV (Device component use); USES (Uses)  
 (**phosphor; light-emitting**  
**device** with organic layer doped with **phosphor**  
 fabricated by using)
- IT 7439-96-5, Manganese, uses 7440-53-1, Europium, uses 7440-69-9,  
 Bismuth, uses 16397-91-4, Manganese(2+), uses 16910-54-6,  
 Europium(2+), uses 19768-33-3, Manganese(4+), uses 22541-18-0,  
 Europium(3+), uses 23713-46-4, Bismuth(3+), uses  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (**phosphor; light-emitting**  
**device** with organic layer doped with **phosphor**  
 fabricated by using)
- L108 ANSWER 13 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2003:77368 Document No. 138:144826 Methods for producing  
**electroluminescent devices** by screen printing.  
 Epstein, Arthur J.; Wang, Yunzhang Z. (The Ohio State University,  
 USA). U.S. Pat. Appl. Publ. US 2003022020 A1 20030130, 10 pp.  
 (English). CODEN: USXXCO. APPLICATION: US 2002-196523 20020716.  
 PRIORITY: US 2001-PV308276 20010727.
- IT 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); PEP (Physical, engineering or  
 chemical process); PYP (Physical process); PROC (Process); USES  
 (Uses)  
 (**light-emitting layer**; methods for producing  
**polymer electroluminescent devices** by  
 applying conductive paste material using methods such as screen  
 printing)

-RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)

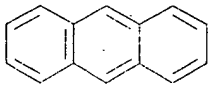


IC ICM H05B033-00  
 ICS B05D005-12  
 INCL 428690000; 427402000; 313504000; 313506000; 428917000; 427066000  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 76  
 ST **electroluminescent device** screen printing  
 layered composite conductive paste  
 IT Polyanilines  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); PROC (Process); USES (Uses)  
 (buffer layer; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)  
 IT Polyamines  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (dendrimers, starburst; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)  
 IT Amines, uses  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (diamines, aromatic, **electron-transporting** layer; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)  
 IT Polyoxadiazoles  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (**electron-transporting** layer; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)  
 IT Coating materials  
 (gas-impermeable, oxygen and water impermeable substrates; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)  
 IT Polyesters, uses  
 RL: DEV (Device component use); USES (Uses)  
 (indium tin oxide-coated substrate; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)  
 IT Glass substrates  
 (indium tin oxide-coated; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)  
 IT Polyphenyls  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); PROC (Process); USES (Uses)

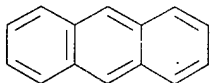
- (light-emitting material; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT Paintings  
Spraying  
(methods for producing polymer **electroluminescent devices** by)
- IT Electrically conductive pastes  
**Electroluminescent devices**  
Electronic device fabrication  
Screen printing  
(methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT Poly(arylenealkenylenes)  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); PROC (Process); USES (Uses)  
(oligomeric **light-emitting material**; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT Dendritic polymers  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
(polyamines, starburst; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT Conducting polymers  
(polypyrroles, buffer layer; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT Conducting polymers  
(polythiophenes, buffer layer; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT Conducting polymers  
(semiconducting and; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT 94928-86-6, Tris(2-phenylpyridine)iridium  
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
(4,4'-N,N'-dicarbazol-biphenyl doped with; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT 7440-22-4, Silver, properties  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)  
(conductive paste; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT 7440-44-0, Carbon, uses 7440-57-5, Gold, uses 7782-42-5, Graphite, uses  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
(conductive paste; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- IT 15082-28-7

- RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (electron-transporting layer; methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)
- IT 33435-31-3 88702-16-3, Poly(2,5-thiophenediyl-1,4-phenylene)  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)  
 (emitting blend; methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)
- IT 25038-59-9, PET, uses  
 RL: DEV (Device component use); USES (Uses)  
 (indium tin oxide-coated substrate; methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)
- IT 120-12-7, Anthracene, uses 220694-90-6  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (light-emitting layer; methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)
- IT 88493-55-4, Sexithiophene 95270-88-5, Polyfluorene  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); PROC (Process); USES (Uses)  
 (light-emitting material; methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)
- IT 25013-01-8, Poly(pyridine)  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); PROC (Process); USES (Uses)  
 (light-emitting or electron-transporting layer; methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)
- IT 2085-33-8, Tris(8-quinolinolato)aluminum  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (light-emitting or electron-transporting layer; methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)
- IT 25067-59-8, Poly(vinylcarbazole)  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); PROC (Process); USES (Uses)  
 (light-emitting or hole-transporting layer; methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)
- IT 50926-11-9, Indium tin oxide  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)  
 (methods for producing polymer electroluminescent devices by applying conductive paste material using methods such as screen printing)



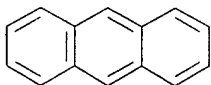
- IT 58328-31-7  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (tris(2-phenylpyridine)iridium-doped emitting material; methods for producing polymer **electroluminescent devices** by applying conductive paste material using methods such as screen printing)
- L108 ANSWER 14 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2003:77230 Document No. 138:144819 **Light-emitting device** and manufacturing method thereof. Seo, Satoshi; Shitagaki, Satoko (Semiconductor Energy Laboratory Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2003020088 A1 20030130, 26 pp. (English).. CODEN: USXXCO. APPLICATION: US 2002-189439 20020708. PRIORITY: JP 2001-213139 20010713.
- IT 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); USES (Uses)  
 (**phosphor; light-emitting device** and method of fabrication using polymers)
- RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)
- 
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- IC ICM H01L033-00  
 INCL 257103000  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 38, 76  
 ST **light emitting device** fabrication  
 IT **Electroluminescent devices**  
 Electronic device fabrication  
 (**light-emitting device** and method of fabrication using polymers)
- IT 50926-11-9, Indium tin oxide  
 RL: DEV (Device component use); USES (Uses)  
 (**anode; light-emitting device** and method of fabrication using polymers)
- IT 91-22-5D, Quinoline, aluminum complex  
 RL: DEV (Device component use); USES (Uses)  
 (**electron transport layer; light-emitting device** and method of fabrication using polymers)
- IT 2085-33-8, Alq3 4733-39-5  
 RL: DEV (Device component use); USES (Uses)  
 (**electron transport; light-emitting device** and method of fabrication using polymers)
- IT 94928-86-6  
 RL: DEV (Device component use); USES (Uses)  
 (**green light phosphor; light-emitting device** and method of fabrication using polymers)
- IT 25190-62-9D, Poly(1,4-phenylene), dialkoxy derivs.  
 RL: DEV (Device component use); USES (Uses)  
 (**high polymer; light-emitting device** and method of fabrication using polymers)
- IT 66-71-7D, 1,10-Phenanthroline, derivative 288-99-3D, 1,3,4-Oxadiazole, derivative  
 RL: DEV (Device component use); USES (Uses)

- (hole blocking; light-emitting device and method of fabrication using polymers)
- IT 95-16-9D, Benzothiazole, zinc complex 288-88-0D,  
1H-1,2,4-Triazole, derivative 14054-87-6 25067-59-8 49718-51-6,  
Poly(4-styrenesulfonate) 126213-51-2, PEDOT  
RL: DEV (Device component use); USES (Uses)  
(light-emitting device and method  
of fabrication using polymers)
- IT 3073-05-0D, dialkoxy derivs.  
RL: DEV (Device component use); USES (Uses)  
(low polymer; light-emitting device  
and method of fabrication using polymers)
- IT 120-12-7, Anthracene, uses 129-00-0, Pyrene, uses  
198-55-0, Perylene 517-51-1, Rubrene 1450-63-1,  
1,1,4,4-Tetraphenyl-1,3-butadiene 1499-10-1, 9,10-  
Diphenylanthracene 7385-67-3, Nile Red 19205-19-7,  
N,N'-Dimethyl-quinacridone 31248-39-2, 2,3,7,8,12,13,17,18-  
Octaethyl-21H,23H-porphyrin platinum 38215-36-0, Coumarin 6  
51325-91-8, 4-Dicyanomethylene-2-methyl-6-(p-dimethylamino-styryl)-  
4H-pyran 51325-95-2 123847-85-8, 4,4'-Bis(N-(1-naphthyl)-N-  
phenyl-amino)-biphenyl  
RL: DEV (Device component use); USES (Uses)  
(phosphor; light-emitting  
device and method of fabrication using polymers)
- L108: ANSWER 15 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
2002:944589 Document No. 138:30843 Organic light-  
emitting device having a color-neutral dopant in a  
hole-transport layer and/or in an electron  
-transport layer. Hatwar, Tukaram T.; Young, Ralph H.  
(Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1265298 A2  
20021211, 17 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR,  
GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY,  
AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2002-77073  
20020527. PRIORITY: US 2001-875646 20010606.
- IT 120-12-7D, Anthracene, derivs.  
RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)  
(organic light-emitting device having  
color-neutral dopant in hole-transport layer  
and/or in an electron-transport layer)
- RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



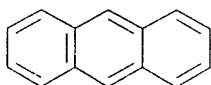
- IC ICM H01L051-20  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)  
Section cross-reference(s): 76  
ST light emitting device color neutral  
dopant hole electron transport  
IT Electroluminescent devices  
(organic light-emitting device having  
color-neutral dopant in hole-transport layer  
and/or in an electron-transport layer)
- IT 50926-11-9, Indium tin oxide  
RL: DEV (Device component use); USES (Uses)  
(anode; organic light-emitting  
device having color-neutral dopant in hole-

- transport layer and/or in an electron-transport layer)
- IT 122648-99-1  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(color-neutral dopant; organic light-emitting device having color-neutral dopant in hole-transport layer and/or in an electron-transport layer)
- IT 2085-33-8, Alq3  
RL: DEV (Device component use); USES (Uses)  
(electron transport layer; organic light-emitting device having color-neutral dopant in hole-transport layer and/or in an electron-transport layer)
- IT 274905-73-6  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(emission layer; organic light-emitting device having color-neutral dopant in hole-transport layer and/or in an electron-transport layer)
- IT 123847-85-8, NPB  
RL: DEV (Device component use); USES (Uses)  
(hole-transport layer; organic light-emitting device having color-neutral dopant in hole-transport layer and/or in an electron-transport layer)
- IT 14514-42-2 14642-34-3 67952-28-7  
RL: DEV (Device component use); USES (Uses)  
(organic light-emitting device having color-neutral dopant in hole-transport layer and/or in an electron-transport layer)
- IT 120-12-7D, Anthracene, derivs.  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(organic light-emitting device having color-neutral dopant in hole-transport layer and/or in an electron-transport layer)
- L108 ANSWER 16 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
2002:801547 Document No. 138:160650 Effects of additives in polymer thick film-organic light emitting diodes (PTF-OLED). Leung, Louis M.; Kwong, C. F.; So, S. K. (Department of Chemistry, Hong Kong Baptist University, Hong Kong SAR, Peop. Rep. China). Displays, 23(4), 171-175 (English) 2002. CODEN: DISPD. ISSN: 0141-9382. Publisher: Elsevier Science B.V..
- IT 120-12-7, Anthracene, uses  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(effect in polymer thick film organic LEDs)
- RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 38, 76
- ST additive polymer thick film org light emitting diode

- IT **Electroluminescent devices**  
(additives effects in polymer thick film organic)
- IT Antioxidants  
Dyes  
Light stabilizers  
Phase transfer catalysts  
(effect in polymer thick film organic LEDs)
- IT 71878-19-8  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(Chim 944; effect in polymer thick film organic LEDs)
- IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 25067-59-8, Poly(N-vinylcarbazole) 65181-78-4, TPD (photoreceptor)  
RL: DEV (Device component use); USES (Uses)  
(additives effects in polymer thick film organic LED containing)
- IT 91-20-3, Naphthalene, uses 92-94-4, p-Terphenyl 120-12-7, Anthracene, uses 123-31-9, Hydroquinone, uses 198-55-0, Perylene 429-42-5, Tetrabutylammonium tetrafluoroborate(1-) 517-51-1, Rubrene 3109-63-5, Tetrabutylammonium hexafluorophosphate(1-) 14937-45-2, Tributylhexadecylphosphonium bromide 51325-91-8, DCM (dye) 496031-59-5, Chim 811  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(effect in polymer thick film organic LEDs)
- L108 ANSWER 17 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
2001:763394 Document No. 135:310708 Organic/polymer **electroluminescent device** employing single-ion conductor. Park, O-Ok; Lee, Tae-Woo (Korea Advanced Institute of Science and Technology, S. Korea). PCT Int. Appl. WO 2001078464 A1 20011018, 20 pp. DESIGNATED STATES: W: DE, JP, KR, US. (English). CODEN: PIXXD2. APPLICATION: WO. 2001-KR535 20010330. PRIORITY: KR 2000-16456 20000330.
- IT 120-12-7, Anthracene, uses  
RL: DEV (Device component use); USES (Uses)  
(organic/polymer **electroluminescent devices** employing single-ion conductors)
- RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- IC ICM H05B033-14  
ICS H05B033-20
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 76
- ST org polymer **electroluminescent device** single ion conductor
- IT **Electroluminescent devices**  
Ionic conductors  
(organic/polymer **electroluminescent devices** employing single-ion conductors)
- IT Optical glass  
Poly(arylenealkenylenes)  
Polyacetylenes, uses  
Polyanilines  
Polyesters, uses  
Polyquinolines  
RL: DEV (Device component use); USES (Uses)

(organic/polymer electroluminescent devices  
employing single-ion conductors)

IT Ionic conductors  
(polymeric; organic/polymer electroluminescent  
devices employing single-ion conductors)

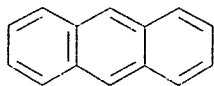
IT Aluminum alloy, nonbase  
Calcium alloy, nonbase  
Copper alloy, nonbase  
Gold alloy, nonbase  
Indium alloy, nonbase  
Iron alloy, nonbase  
Lead alloy, nonbase  
Lithium alloy, nonbase  
Magnesium alloy, nonbase  
Palladium alloy, nonbase  
Platinum alloy, nonbase  
Silver alloy, nonbase  
Tungsten alloy, nonbase  
Zinc alloy, nonbase  
RL: DEV (Device component use); USES (Uses)  
(organic/polymer electroluminescent devices  
employing single-ion conductors)

IT 120-12-7, Anthracene, uses 198-55-0, Perylene 517-51-1,  
Rubrene 1335-25-7, Lead oxide 2085-33-8, Tris(8-  
hydroxyquinolinato)aluminum 7385-67-3, Nile red 7429-90-5,  
Aluminum, uses 7439-89-6, Iron, uses 7439-92-1, Lead, uses  
7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-05-3,  
Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver,  
uses 7440-33-7, Tungsten, uses 7440-50-8, Copper, uses  
7440-57-5, Gold, uses 7440-66-6, Zinc, uses 7440-70-2, Calcium,  
uses 7440-74-6, Indium, uses 7631-86-9, Silica, uses  
9003-53-6, Poly(styrene) 25038-59-9, Polyethylene terephthalate,  
uses 25067-58-7, Polyacetylene 25067-59-8, Poly(9-  
vinylcarbazole) 25087-26-7 25190-62-9, Poly(p-phenylene)  
25233-34-5, Polythiophene 26009-24-5, Poly(p-phenylene vinylene)  
30604-81-0, Polypyrrole 38215-36-0, Coumarin 6 50926-11-9,  
Indium tin oxide 51325-91-8, 4-(Dicyanomethylene)-2-methyl-6-(p-  
dimethylaminostyryl)-4H-pyran 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-  
methylphenyl)-1,1'-biphenyl-4,4'-diamine 95270-88-5,  
Poly(fluorene) 126213-51-2, Polyethylene dioxythiophene  
138184-36-8, MEH-PPV 150405-69-9  
RL: DEV (Device component use); USES (Uses)  
(organic/polymer electroluminescent devices  
employing single-ion conductors)

L108 ANSWER 18 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
2001:730906 Document No. 135:280269 **Electroluminescent  
devices employing organic luminescent  
material/clay nanocomposites.** Park, O-Ok; Lee, Tae-Woo (Korea  
Advanced Institute of Science and Technology, S. Korea). PCT Int.  
Appl. WO 2001072925 A1 20011004, 20 pp. DESIGNATED STATES: W: DE,  
JP, KR, US. (English). CODEN: PIXXD2. APPLICATION: WO 2001-KR534  
20010330. PRIORITY: KR 2000-16466 20000330.

IT 120-12-7, Anthracene, uses  
RL: DEV (Device component use); TEM (Technical or engineered  
material use); USES (Uses)  
(electroluminescent devices employing  
organic luminescent material/clay nanocomposites  
containing)

RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- IC ICM C09K011-00  
ICS C09K011-06; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 38, 76
- ST **electroluminescent device org**  
**luminescent** clay nanocomposite; **OLED** polymer clay nanocomposite; **luminescent material org** polymer clay nanocomposite
- IT Amines, uses  
RL: DEV (Device component use); USES (Uses)  
(aryl, tertiary, **hole-transporting** layer; **electroluminescent devices** employing **organic luminescent material/clay nanocomposites** containing)
- IT Laminated materials  
(clay; **electroluminescent devices** employing **organic luminescent material/clay nanocomposites** containing)
- IT Amines, uses  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(diamines, aromatic; **electroluminescent devices** employing **organic luminescent material/clay nanocomposites** containing)
- IT Alloys, uses  
RL: DEV (Device component use); USES (Uses)  
(**electrode**; **electroluminescent devices** employing **organic luminescent material/clay nanocomposites** containing)
- IT **Electroluminescent devices**  
**Luminescent substances**  
**Nanocomposites**  
**Quantum well devices**  
(**electroluminescent devices** employing **organic luminescent material/clay nanocomposites**)
- IT Clays, uses  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescent devices** employing **organic luminescent material/clay nanocomposites**)
- IT Glass substrates  
(**electroluminescent devices** employing **organic luminescent material/clay nanocomposites** containing)
- IT Coordination compounds  
Polyacetylenes, uses  
Polyanilines  
Polymers, uses  
Polyquinolines  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(**electroluminescent devices** employing **organic luminescent material/clay nanocomposites** containing)
- IT Poly(arylenealkenylenes)  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(poly(arylene vinylene); **electroluminescent devices** employing **organic luminescent**

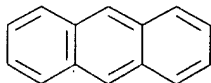
- material/clay nanocomposites containing)
- IT Polyquinoxalines  
 RL: DEV (Device component use); USES (Uses)  
 (polyphenylquinoxalines, poly(phenylquinoxaline);  
 electroluminescent devices employing  
 organic luminescent material/clay nanocomposites  
 containing)
- IT Polyesters, uses  
 RL: DEV (Device component use); USES (Uses)  
 (substrate; electroluminescent devices  
 employing organic luminescent material/clay  
 nanocomposites containing)
- IT 7439-89-6, Iron, uses 7439-92-1, Lead, uses 7439-93-2, Lithium,  
 uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses  
 7440-22-4, Silver, uses 7440-33-7, Tungsten, uses 7440-50-8,  
 Copper, uses 7440-57-5, Gold, uses 7440-66-6, Zinc, uses  
 7440-74-6, Indium, uses  
 RL: DEV (Device component use); USES (Uses)  
 (electrode; electroluminescent  
 devices employing organic luminescent  
 material/clay nanocomposites containing)
- IT 7439-95-4, Magnesium, uses 7440-70-2, Calcium, uses  
 RL: DEV (Device component use); PEP (Physical, engineering or  
 chemical process); PROC (Process); USES (Uses)  
 (electrode; electroluminescent  
 devices employing organic luminescent  
 material/clay nanocomposites containing)
- IT 7429-90-5, Aluminum, properties  
 RL: DEV (Device component use); PEP (Physical, engineering or  
 chemical process); PRP (Properties); PROC (Process); USES (Uses)  
 (electrode; electroluminescent  
 devices employing organic luminescent  
 material/clay nanocomposites containing)
- IT 9003-53-6, Polystyrene  
 RL: DEV (Device component use); USES (Uses)  
 (electroluminescent devices employing  
 organic luminescent material/clay nanocomposites  
 containing)
- IT 25067-59-8, Poly(N-vinylcarbazole) 115708-89-9  
 RL: DEV (Device component use); PEP (Physical, engineering or  
 chemical process); PROC (Process); USES (Uses)  
 (electroluminescent devices employing  
 organic luminescent material/clay nanocomposites  
 containing)
- IT 138184-36-8  
 RL: DEV (Device component use); PEP (Physical, engineering or  
 chemical process); PRP (Properties); PROC (Process); USES (Uses)  
 (electroluminescent devices employing  
 organic luminescent material/clay nanocomposites  
 containing)
- IT 120-12-7, Anthracene, uses 198-55-0, Perylene 517-51-1,  
 Rubrene 7385-67-3, Nile red 25067-58-7, Polyacetylene  
 25087-26-7 25190-62-9, Poly(p-phenylene) 25233-34-5,  
 Polythiophene 30604-81-0, Polypyrrole 38215-36-0, coumarin 6  
 51325-91-8, 4-(Dicyanomethylene)-2-methyl-6-(p-dimethylaminostyryl)-  
 4H-pyran 65181-78-4, (N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-  
 biphenyl-4,4'-diamine) 95270-88-5, Polyfluorene 150405-69-9  
 RL: DEV (Device component use); TEM (Technical or engineered  
 material use); USES (Uses)  
 (electroluminescent devices employing  
 organic luminescent material/clay nanocomposites  
 containing)
- IT 192198-85-9 203915-07-5 302921-88-6  
 RL: DEV (Device component use); USES (Uses)  
 (electron-transporting layer;  
 electroluminescent devices employing

- organic luminescent material/clay nanocomposites containing)**
- IT 2085-33-8, Alq3  
 RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
 (electron-transporting layer;  
 electroluminescent devices employing  
 organic luminescent material/clay nanocomposites containing)
- IT 288-13-1, Pyrazole 58328-31-7 123847-85-8, 4,4'-Bis[N-(-naphthyl-1-)-N-phenylamino]biphenyl  
 RL: DEV (Device component use); USES (Uses)  
 (hole-transporting layer;  
 electroluminescent devices employing  
 organic luminescent material/clay nanocomposites containing)
- IT 1318-93-0, Montmorillonite, properties  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (nanoclay; electroluminescent devices  
 employing organic luminescent material/clay nanocomposites containing)
- IT 1318-74-7, Kaolinite, uses 53320-86-8, Laponite  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (nanoclay; electroluminescent devices  
 employing organic luminescent material/clay nanocomposites containing)
- IT 1335-25-7, Lead oxide 126213-51-2, Polyethylene dioxythiophene  
 RL: DEV (Device component use); USES (Uses)  
 (semitransparent electrode; electroluminescent  
 devices employing organic luminescent  
 material/clay nanocomposites containing)
- IT 50926-11-9, Indium tin oxide  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)  
 (semitransparent electrode; electroluminescent  
 devices employing organic luminescent  
 material/clay nanocomposites containing)
- IT 14808-60-7, Quartz, uses 25038-59-9, Polyethylene terephthalate, uses  
 RL: DEV (Device component use); USES (Uses)  
 (substrate; electroluminescent devices  
 employing organic luminescent material/clay nanocomposites containing)

L108 ANSWER 19 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 2001:210262 Document No. 134:244994 Organic electroluminescent  
 display. Kido, Junji; Ebisawa, Akira (TDK Electronics Co., Ltd.,  
 Japan). Jpn. Kokai Tokkyo Koho JP 2001076874 A2 20010323, 10 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-253109 19990907.

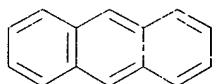
IT 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent display)

RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



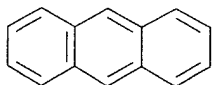


IC ICM H05B033-14  
ICS H05B033-10  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org electroluminescent display polymer phosphor  
IT Electric current  
Electrodes  
Electroluminescent devices  
Glass substrates  
Inks  
Phosphors  
Printing (impact)  
(organic electroluminescent display)  
IT 86-73-7, Fluorene 120-12-7, Anthracene, uses 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9, ITO 71747-83-6, Aluminum 93. lithium 7 atomic%  
RL: DEV (Device component use); USES (Uses)  
(organic electroluminescent display)  
L108 ANSWER 20 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1999:779707 Document No. 132:159446 Improved efficiencies of light-emitting diodes through incorporation of charge transporting components in tri-block polymers. Chen, J. P.; Markiewicz, D.; Lee, V. Y.; Klaerner, G.; Miller, R. D.; Scott, J. C. (IBM Research Division, Almaden Research Center, San Jose, CA, USA). Synthetic Metals, 107(3), 203-207 (English) 1999. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier Science S.A..  
IT 120-12-7D, Anthracene, polymer derivs., properties  
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(diode; improved efficiencies of light-emitting diodes through incorporation of charge transporting components in tri-block polymers)  
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



CC 76-3 (Electric Phenomena)  
Section cross-reference(s): 38, 56  
ST charge transfer block polymer  
light emitting diode efficiency; dihexylfluorene anthracene copolymer light emitting diode; triphenylamine oxadiazole block copolymer light emitting diode  
IT Polymers, properties  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(block; improved efficiencies of light-emitting diodes through incorporation of charge transporting components in tri-block polymers)  
IT Conduction electrons  
(hole, injection of; improved efficiencies of light-emitting diodes through incorporation of charge transporting components in tri-block polymers)  
IT Electric current carriers  
(hole, transport, ion; improved efficiencies of light-emitting diodes through

- incorporation of **charge transporting** components in tri-block polymers)
- IT **Charge transfer devices**  
**Electroluminescent devices**  
 Photosynthetic charge recombination  
 Work function  
 (improved efficiencies of **light-emitting** diodes through incorporation of **charge transporting** components in tri-block polymers)
- IT Electric current-potential relationship  
 (single layer ITO-Ca/Al **electrode**; improved efficiencies of **light-emitting** diodes through incorporation of **charge transporting** components in tri-block polymers)
- IT 120-12-7D, Anthracene, polymer derivs., properties  
 603-34-9D, Triphenylamine, polymer derivs. 11120-54-0D, Oxadiazole, polymer derivs. 123863-97-8D, 9,9-Dihexylfluorene, polymer derivs.  
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (diode; improved efficiencies of **light-emitting** diodes through incorporation of **charge transporting** components in tri-block polymers)
- IT 7440-70-2, Calcium, properties  
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (improved efficiencies of **light-emitting** diodes through incorporation of **charge transporting** components in tri-block polymers)
- IT 7429-90-5, Aluminum, properties  
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (work function, **electrode**; improved efficiencies of **light-emitting** diodes through incorporation of **charge transporting** components in tri-block polymers)
- L108 ANSWER 21 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1999:763812 Document No. 132:16989 Organic **electroluminescent device**. Hamada, Yuji; Kanno, Hiroshi; Tsujioka, Tsuyoshi; Usuki, Tatsuro (Sanyo Electric Co., Ltd., Japan). Eur. Pat. Appl. EP 961330 A2 19991201, 27 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-109757 19990518. PRIORITY: JP 1998-136988 19980519; JP 1998-267927 19980922; JP 1999-130177 19990511.
- IT 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
 (organic **electroluminescent devices** with carrier transport or energy transfer dopants)
- RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)

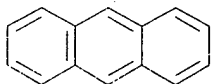


- IC ICM H01L051-20  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 76  
 ST carrier transport dopant org **electroluminescent**

device; energy transfer dopant org  
**electroluminescent device**  
 IT **Electroluminescent devices**  
     **Electroluminescent devices**  
         (organic **electroluminescent devices** with carrier  
           transport or energy transfer dopants)  
 IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-  
 hydroxyquinolinato)aluminum 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-  
 methylphenyl)-1,1'-biphenyl-4,4'-diamine 123847-85-8  
 124729-98-2, MTDATA  
 RL: DEV (Device component use); USES (Uses)  
     (organic **electroluminescent devices** with carrier  
       transport or energy transfer dopants)  
 IT 120-12-7, Anthracene, uses 517-51-1, Rubrene 1499-10-1,  
 9,10-Diphenyl anthracene 7385-67-3, Nile red 51325-91-8, DCM1  
 51325-95-2, DCM2 138372-68-6  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
     (organic **electroluminescent devices** with carrier  
       transport or energy transfer dopants)

L108 ANSWER 22 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1999:624690 Document No. 131:250205 **Electroluminescent**  
**devices** using blended systems. Wehrmann, Rolf; Heuer,  
 Helmut Werner; Jonas, Friedrich; Elschner, Andreas; Mayer, Andrea;  
 Hueppauff, Martin; Andries, Hartwig (Bayer A.-G., Germany; Bosch,  
 Robert, G.m.b.H.). Ger. Offen. DE 19812258 A1 19990923, 64 pp.  
 (German). CODEN: GWXXBX. APPLICATION: DE 1998-19812258 19980320.  
 IT 120-12-7, Anthracene, uses  
 RL: DEV (Device component use); USES (Uses)  
     (**electroluminescent devices** using blended  
       systems)

RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H05B033-14  
 ICS C09K011-06  
 ICA C08G061-12; C09B015-00; C09B048-00; C07C211-50; C07C211-52;  
 C07C211-54; C07C217-84; C07C251-18; C07F007-00; C07F005-00;  
 C07F003-00  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 76  
 ST **electroluminescent device** blended system  
 IT Cyanine dyes  
     **Electroluminescent devices**  
         (**electroluminescent devices** using blended  
           systems)  
 IT Rare earth complexes  
 Rare earth metals, uses  
 RL: DEV (Device component use); USES (Uses)  
     (**electroluminescent devices** using blended  
       systems)  
 IT Polymers, uses  
 RL: DEV (Device component use); USES (Uses)  
     (polythiophenes; **electroluminescent devices**  
       using blended systems)  
 IT 50926-11-9, Indium tin oxide 117665-21-1  
 RL: DEV (Device component use); USES (Uses)

(electrode; electroluminescent  
devices using blended systems)

IT 56-53-1, Distilbene 81-83-4, Naphthalimide 85-01-8,  
Phenanthrene, uses 91-64-5, Coumarin 120-12-7,  
Anthracene, uses 198-55-0, Perylene 517-51-1, Rubrene  
574-93-6, Phthalocyanine 588-59-0, Stilbene 1047-16-1,  
Quinacridone 1306-23-6, Cadmium sulfide, uses 1306-24-7, Cadmium  
selenide, uses 1314-13-2, Zinc oxide (ZnO), uses 1314-98-3, Zinc  
sulfide, uses 2085-33-8, Tris(8-hydroxyquinolinato)aluminum  
7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7439-95-4,  
Magnesium, uses 7440-09-7, Potassium, uses 7440-23-5, Sodium,  
uses 7440-42-8, Boron, uses 7440-55-3, Gallium, uses  
7440-70-2, Calcium, uses 7440-74-6, Indium, uses 9003-53-6,  
Polystyrene 13978-85-3, Bis(8-hydroxyquinolinato)zinc  
14128-73-5, Bis(8-hydroxy-2-methylquinolinato)zinc 14406-92-9,  
Bis(8-hydroxy-2-methylquinolinato)magnesium 14514-42-2,  
Tris(8-hydroxyquinolinato)indium 14642-34-3, Tris(8-  
hydroxyquinolinato)gallium 14855-54-0, Tris(8-hydroxy-2-  
methylquinolinato)gallium 15276-55-8 16842-52-7,  
Tris(8-hydroxy-2-methylquinolinato)aluminum 18747-41-6,  
Bis(8-hydroxy-2-methylquinolinato)beryllium 20441-06-9  
20441-07-0 25067-59-8, Polyvinylcarbazole 65181-78-4  
67251-47-2, Tris(8-hydroxy-2-methylquinolinato)indium 67952-28-7,  
Bis(8-hydroxyquinolinato)magnesium 105465-24-5 105766-30-1,  
Aluminum tris(5-methyloxine) 106614-54-4 122738-21-0  
123847-85-8 126213-51-2 128366-29-0 128366-30-3 128366-31-4  
128366-33-6 128366-35-8 128366-37-0 137377-04-9 142894-36-8  
142894-37-9 142894-38-0 142894-39-1 147951-36-8 147951-37-9  
147951-38-0 169228-81-3 182069-71-2 184104-78-7 188049-41-4  
189178-04-9 189196-94-9 189196-95-0 191088-76-3 201870-09-9  
201870-12-4 201870-14-6 201870-15-7 201870-17-9 201870-18-0  
201870-19-1 201870-20-4 201870-21-5 201870-22-6 201870-23-7  
201870-24-8 201870-25-9 201870-26-0 201870-27-1 201870-28-2  
201870-29-3 201870-30-6 201870-31-7 201870-32-8 201870-34-0  
228875-43-2 244227-88-1 244227-89-2

RL: DEV (Device component use); USES (Uses)

(electroluminescent devices using blended  
systems)

IT 50851-57-5

RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)

(electroluminescent devices using blended  
systems)

L108 ANSWER 23 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

1994:713381 Document No. 121:313381 Optical investigation of  
high-field conduction and prebreakdown in a dielectric liquid.  
Brosseau, C.; Beroual, A. (CERMO, Saint-Martin-d'Heres, Fr.). IEEE  
Transactions on Dielectrics and Electrical Insulation, 1(3), 397-402  
(English) 1994. CODEN: ITDIES. ISSN: 1070-9878.

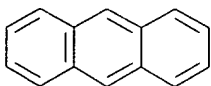
IT 120-12-7, Anthracene, uses

RL: NUU (Other use, unclassified); USES (Uses)

(luminescent probe; optical properties, high-field  
conduction and prebreakdown in monobenzyltoluene/dibenzyltoluene  
liquid mixture)

RN 120-12-7 HCAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)

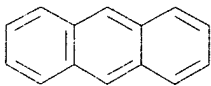


CC 76-9 (Electric Phenomena)

Section cross-reference(s): 73  
 IT Dielectric loss  
 Dissociation  
 Electric conductivity and conduction  
 Luminescence  
 Luminescence, electro-  
 Recombination  
 Ultraviolet and visible spectra  
 (optical properties, high-field conduction and prebreakdown in monobenzyltoluene/dibenzyltoluene liquid mixture)  
 IT 120-12-7, Anthracene, uses 779-02-2, 9-Methylanthracene  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (luminescent probe; optical properties, high-field conduction and prebreakdown in monobenzyltoluene/dibenzyltoluene liquid mixture)

L108 ANSWER 24 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1994:566257 Document No. 121:166257 Space-resolved recombination **electroluminescence** in organic crystals. Kalinowski, Jan (Istituto di Fotochimica e Radiazioni d'Alta Energia del C.N.R. Bologna, via P. Gobetti 101, Bologna, 40129, Italy). Synthetic Metals, 64(2-3), 123-32 (English) 1994. CODEN: SYMEDZ. ISSN: 0379-6779.

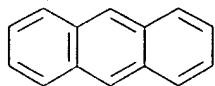
IT 120-12-7, Anthracene, properties  
 RL: PRP (Properties)  
 (space-resolved recombination **electroluminescence** of,)  
 RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



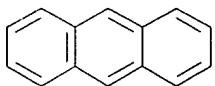
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST space resolved recombination **electroluminescence** org crystal  
 IT **Luminescence, electro-**  
 (recombination, space-resolved, of organic crystals)  
 IT 92-24-0, Tetracene 120-12-7, Anthracene, properties  
 RL: PRP (Properties)  
 (space-resolved recombination **electroluminescence** of,)

L108 ANSWER 25 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1994:445983 Document No. 121:45983 Organic thin film **electroluminescent devices**. Minsik, Bae; Sato, Masaki; Wada, Tatsuaki; Takeuchi, Manabu (Dep. Electr. Electron. Eng., Ibaraki Univ., Hitachi, 316, Japan). Int. Conf. Process. Mater. Prop., 1st, 1109-12. Editor(s): Henein, Hani; Oki, Takeo. Miner. Met. Mater. Soc: Warrendale, Pa. (English) 1993. CODEN: 59TDAS.

IT 120-12-7, Anthracene, uses  
 RL: USES (Uses)  
 (doping with, of **electroluminescent device** with aluminum hydroxyquinoline and triphenyldiamine derivative, c.d. and efficiency in relation to)  
 RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 76
- ST **electroluminescent device** triphenyldiamine deriv  
hydroxyquinoline aluminum; phenanthroline methylantracene  
benzathrone doping cd; benzantracene naphthacene doping efficiency
- IT **Electroluminescent devices**  
(with aluminum hydroxyquinoline and triphenyldiamine derivative, c.d.  
and efficiency for, doping effect on)
- IT 56-55-3, Benz-a-anthracene 66-71-7, 1,10-Phenanthroline 82-05-3,  
Benzanthrone 92-24-0, Naphthacene 120-12-7, Anthracene,  
uses 779-02-2, 9-Methylantracene  
RL: USES (Uses)  
(doping with, of **electroluminescent device**  
with aluminum hydroxyquinoline and triphenyldiamine derivative, c.d.  
and efficiency in relation to)
- IT 7439-95-4, Magnesium, uses 50926-11-9, Indium tin oxide  
RL: USES (Uses)  
(**electrode**, in **electroluminescent devices** with aluminum hydroxyquinoline and  
triphenyldiamine derivative)
- IT 79183-73-6  
RL: USES (Uses)  
(**hole transport layer**, in  
**electroluminescent devices**)
- IT 2085-33-8  
RL: USES (Uses)  
(**light emitting layer**, in  
**electroluminescent devices**)
- L108 ANSWER 26 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1994:64968 Document No. 120:64968 Space-resolved recombination  
**electroluminescence** in organic crystals. Kalinowski, Jan  
(Ist. Fotochim. Radiazioni Alta Energia, CNR, Bologna, 40126,  
Italy). Proceedings of SPIE-The International Society for Optical  
Engineering, 1910(Electroluminescent Materials, Devices, and  
Large-Screen Displays), 135-46 (English) 1993. CODEN: PSISDG.  
ISSN: 0277-786X.
- IT 120-12-7, Anthracene, properties  
RL: PRP (Properties)  
(space-resolved recombination **electroluminescence** of)
- RN 120-12-7 HCAPLUS
- CN Anthracene (8CI, 9CI) (CA INDEX NAME)

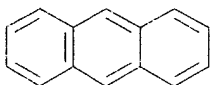


- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 22
- ST recombination **electroluminescence** org crystal;  
**luminescence electro** recombination org  
crystal
- IT **Luminescence, electro-**  
(recombination, space-resolved, of organic crystals)

IT 92-24-0, Tetracene 120-12-7, Anthracene, properties  
RL: PRP (Properties)  
(space-resolved recombination electroluminescence of)

L108 ANSWER 27 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1992:30431 Document No. 116:30431 **Electroluminescence** in  
perylene-doped anthracene films: the ambient gas effect in the  
emission process. Okii, Hironori; Harada, Ayako; Sunaga, Kenji;  
Hara, Hiroshi; Ohba, Yujiro (Fac. Technol., Muroran Inst. Technol.,  
Muroran, 050, Japan). Japanese Journal of Applied Physics, Part 1:  
Regular Papers, Short Notes & Review Papers, 30(11A), 2791-6  
(English) 1991. CODEN: JAPNDE. ISSN: 0021-4922.

IT 120-12-7, Anthracene, properties  
RL: PRP (Properties)  
(electroluminescence of perylene-doped film of,  
nitrogen ambient gas effect on emission process in)  
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

ST **electroluminescence** perylene doped anthracene film;  
**luminescence electro** perylene doped anthracene  
film

IT **Luminescence, electro-**  
(of perylene-doped anthracene film, ambient gas effect on  
emission process in)

IT 7727-37-9, Nitrogen, uses  
RL: USES (Uses)  
(ambient gas, effects on **electroluminescence** emission  
process of perylene-doped anthracene film)

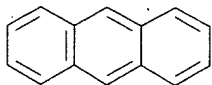
IT 198-55-0, Perylene  
RL: PRP (Properties)  
(**electroluminescence** of anthracene film doped with,  
nitrogen ambient gas effect on emission process in)

IT 120-12-7, Anthracene, properties  
RL: PRP (Properties)  
(**electroluminescence** of perylene-doped film of,  
nitrogen ambient gas effect on emission process in)

L108 ANSWER 28 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1991:174682 Document No. 114:174682 **Electroluminescent**  
large-area light source. Saito, Shogo; Tsutsui,  
Tetsuo; Adachi, Chihaya (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo  
Koho JP 02210790 A2 19900822 Heisei, 4 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1989-30831 19890208.

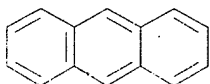
IT 120-12-7D, Anthracene, dimethylaminophenylalkyl derivs.  
RL: PRP (Properties)  
(thin-film **electroluminescent devices** containing)

RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



IC ICM H05B033-14  
 CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST **electroluminescent device** org thin film  
 IT **Electroluminescent devices**  
 (film, organic, as large-area **light sources**)  
 IT 120-12-7D, Anthracene, dimethylaminophenylalkyl derivs.  
 131088-86-3  
 RL: PRP (Properties)  
 (thin-film **electroluminescent devices** containing)

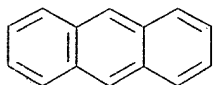
L108 ANSWER 29 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1985:624223 Document No. 103:224223 **Light emitting**  
 element. Sakamoto, Masanori (Toshiba Corp., Japan). Jpn. Kokai  
 Tokkyo Koho JP 60165771 A2 19850828 Showa, 4 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1984-20817 19840209.  
 IT 120-12-7, properties  
 RL: PRP (Properties)  
 (**light emitting** element from thin film of,  
**electrode** for)  
 RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



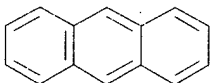
IC ICM H01L033-00  
 ICS H05B033-14  
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST alkali metal alloy **luminous** element; **light**  
**emitting** element org film  
 IT **Electroluminescent devices**  
 (alkali metal-containing alloy for **electrodes** of)  
 IT 7440-09-7, uses and miscellaneous 7440-17-7, uses and  
 miscellaneous 7440-23-5, uses and miscellaneous 7440-46-2, uses  
 and miscellaneous  
 RL: USES (Uses)  
 (**electrode** from alloy containing, for **light**  
**emitting** element)  
 IT 61691-37-0 72428-30-9 73990-65-5 87871-87-2 99383-65-0  
 99383-66-1 99383-67-2 99383-68-3 99383-69-4 99383-70-7  
 99383-71-8  
 RL: PRP (Properties)  
 (**light emitting** element **electrode**  
 from)  
 IT 120-12-7, properties  
 RL: PRP (Properties)  
 (**light emitting** element from thin film of,  
**electrode** for)

L108 ANSWER 30 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1985:603512 Document No. 103:203512 **Luminescent**  
**devices**. Sakamoto, Masanori (Fujitsu Ltd., Japan). Jpn.  
 Kokai Tokkyo Koho JP 60165770 A2 19850828 Showa, 5 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1984-20816 19840209.  
 IT 120-12-7, uses and miscellaneous  
 RL: USES (Uses)  
 (**electroluminescent device** from thin film of)  
 RN 120-12-7 HCAPLUS  
 CN Anthracene (8CI, 9CI) (CA INDEX NAME)



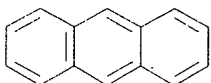


- IC ICM .H01L033-00  
ICS H05B033-14
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST **luminescent** element lithium nitride **electrode**;  
lithium nitride thin film **electrode**
- IT **Electroluminescent devices**  
(lithium nitride **electrode** for)
- IT 26134-62-3  
RL: PRP (Properties)  
(**electroluminescent device electrode** from)
- IT 120-12-7, uses and miscellaneous  
RL: USES (Uses)  
(**electroluminescent device** from thin film of)
- L108 ANSWER 31 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1977:447075 Document No. 87:47075 **Electroluminescence** of  
anthracene with powdered graphite **electrodes** and ambient  
gas effects on the **electrodes**. Gu, Jyongsil; Kawabe,  
Mitsuo; Masuda, Kohzoh; Namba, Susumu (Fac. Eng. Sci., Osaka Univ.,  
Toyonaka, Japan). Journal of Applied Physics, 48(6), 2493-4  
(English) 1977. CODEN: JAPIAU. ISSN: 0021-8979.
- IT 120-12-7, uses and miscellaneous  
RL: DEV (Device component use); TEM (Technical or engineered  
material use); USES (Uses)  
(**electroluminescent devices**, with graphite  
**electrodes**, effects of ambient gases on)
- RN 120-12-7 HCAPLUS
- CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- CC 76-7 (Electric Phenomena)
- ST **electroluminescence** anthracene graphite **electrode**  
; **electron injection** anthracene  
**electroluminescence**; **hole injection**  
anthracene **electroluminescence**; injection carrier  
anthracene **electroluminescence**; gas effect anthracene  
**electroluminescence**; air ambient anthracene  
**electroluminescence**; nitrogen ambient anthracene  
**electroluminescence**
- IT **Electroluminescent devices**  
(anthracene, with graphite **electrodes**, effects of  
ambient gases on)
- IT Air  
(**electroluminescent devices** with graphite  
**electrodes** in, of anthracene)
- IT **Electrodes**  
(graphite, anthracene **electroluminescent**  
**devices** with, effects of ambient gases on)
- IT **Electron**, conduction  
**Hole**  
(injection of, anthracene **electroluminescent**

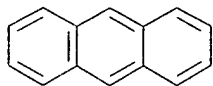
- devices with)
- IT Electric current-potential relationship  
(of anthracene **electroluminescent devices**  
with graphite **electrodes**, effects of ambient gases on)
- IT 7782-42-5, uses and miscellaneous  
RL: USES (Uses)  
(**electrode**, anthracene **electroluminescent devices** with, effects of ambient gases on)
- IT 74-85-1, uses and miscellaneous 1333-74-0, uses and miscellaneous  
7440-37-1, uses and miscellaneous 7727-37-9, uses and  
miscellaneous 7782-44-7, uses and miscellaneous  
RL: USES (Uses)  
(**electroluminescent devices** with graphite  
**electrodes** in, of anthracene)
- IT 120-12-7, uses and miscellaneous  
RL: DEV (Device component use); TEM (Technical or engineered  
material use); USES (Uses)  
(**electroluminescent devices**, with graphite  
**electrodes**, effects of ambient gases on)
- L108 ANSWER 32 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1973:436355 Document No. 79:36355 **Injection of  
electrons** and electron capture levels in anthracene single  
crystals. Makhotenko, A. N.; Litvinenko, V. Yu. (Rostov. Gos.  
Univ., Rostov-on-Don, USSR). Fizika i Tekhnika Poluprovodnikov  
(Sankt-Peterburg), 7(3), 630-1 (Russian) 1973. CODEN: FTPPA4.  
ISSN: 0015-3222.
- IT 120-12-7, properties  
RL: PRP (Properties)  
(**electron capture and injection** in)
- RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- CC 71-13 (Electric Phenomena)  
Section cross-reference(s): 73
- ST **electron injection** anthracene; trap level  
anthracene; **electroluminescence** anthracene;  
**luminescence** anthracene
- IT **Luminescence**  
(**electro-**, in anthracene during **electron  
injection**)
- IT Electric current-potential relationship  
(in anthracene, **electron capture and injection**  
in relation to)
- IT **Electron**, conduction  
(**injection** of, in anthracene)
- IT 120-12-7, properties  
RL: PRP (Properties)  
(**electron capture and injection** in)

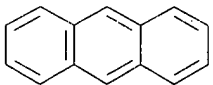
- L108 ANSWER 33 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1973:77287 Document No. 78:77287 Organic **electroluminescent**  
cells having a tunnel injection **cathode**. Dresner, Joseph;  
Goodman, Alvin Malcolm (RCA Corp.). U.S. US 3710167 19730109, 5 pp.  
(English). CODEN: USXXAM. APPLICATION: US 1970-51898 19700702.
- IT 120-12-7, uses and miscellaneous  
RL: USES (Uses)  
(**electroluminescent** cells, with silica-silicon tunnel  
**injection cathode**)

RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



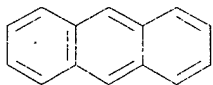
IC H05B  
INCL 313108000A  
CC 71-7 (Electric Phenomena)  
Section cross-reference(s): 73  
ST **electroluminescent cell org phosphor; tunnel injection cathode electroluminescence**  
IT **Electroluminescent devices**  
(anthracene cells, with silica-silicon tunnel injection cathode)  
IT **Cathodes**  
(silica-silicon tunnel-injection, for anthracene **electroluminescent** cells)  
IT 7440-21-3, uses and miscellaneous  
RL: USES (Uses)  
(**cathodes** from silica and, for tunnel injection in anthracene **electroluminescent** cells)  
IT 7631-86-9, uses and miscellaneous  
RL: USES (Uses)  
(**cathodes** from silicon and, for tunnel injection in anthracene **electroluminescent** cells)  
IT 120-12-7, uses and miscellaneous  
RL: USES (Uses)  
(**electroluminescent** cells, with silica-silicon tunnel injection **cathode**)

L108 ANSWER 34 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1972:545221 Document No. 77:145221 Double injection **electroluminescence** in anthracene and carrier injection properties of carbon fibers. Williams, W. G.; Spong, P. L.; Gibbons, D. J. (Cent. Res. Lab., EMI Ltd., Hayes/Middlesex, UK). Journal of Physics and Chemistry of Solids, 33(10), 1879-84 (English) 1972. CODEN: JPCSAW. ISSN: 0022-3697.  
IT 120-12-7, properties  
RL: PRP (Properties)  
(**electroluminescence** in diodes of, double-injection)  
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



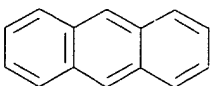
CC 71-7 (Electric Phenomena)  
ST double injection **electroluminescence** anthracene; carbon fiber injecting contact  
IT **Electroluminescent devices**  
(anthracene diodes, double injection currents in)  
IT Electric contacts  
(carbon fibers, **electron injection** parameters of)  
IT **Luminescence**  
(**electro-**, of anthracene diodes, double injection)  
IT Electric current-potential relationship

- (in anthracene **electroluminescent** diodes, double injection parameters in relation to)
- IT **Electron**, conduction  
(injection of, by carbon fiber contacts)
- IT 120-12-7, properties  
RL: PRP (Properties)  
(**electroluminescence** in diodes of, double-injection)
- IT 7440-44-0, properties  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**electron injection** by fiber contacts of)
- L108 ANSWER 35 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1972:133011 Document No. 76:133011 Temperature dependence of d.c. and pulsed **electroluminescence** in anthracene crystals.  
Williams, Digby Frederick; Schadt, M. (Natl. Res. Counc. Canada, Ottawa, ON, Can.). Proc. Int. Conf. Photocond., 3rd, Meeting Date 1969, 303-9. Editor(s): Pell, Erik M. Pergamon: Oxford, Engl. (English) 1971. CODEN: 24RMAB.
- IT 120-12-7, properties  
RL: PRP (Properties)  
(**electroluminescence** in crystals of, with carrier injection electrodes)
- RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- CC 71 (Electric Phenomena)  
Section cross-reference(s): 73
- ST **electroluminescence** anthracene; **luminescence** spectrum anthracene
- IT **Luminescence**  
(**electro-**, of anthracene with carrier injection contacts)
- IT 120-12-7, properties  
RL: PRP (Properties)  
(**electroluminescence** in crystals of, with carrier injection electrodes)

- L108 ANSWER 36 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1972:92365 Document No. 76:92365 Singlet exciton-trapped carrier interaction in anthracene. Pope, M.; Burgos, J.; Wotherspoon, N. (Dep. Chem., New York Univ., New York, NY, USA). Chemical Physics Letters, 12(1), 140-3 (English) 1971. CODEN: CHPLBC. ISSN: 0009-2614.
- IT 120-12-7, properties  
RL: PRP (Properties)  
(**fluorescence** of singlet excitons in, elec. field modulation of)
- RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



- CC 73 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

Section cross-reference(s): 71, 70

ST **fluorescence** modulation anthracene; anthracene singlet  
exciton annihilation; crystal defect analysis

IT Exciton  
(**fluorescence**, of anthracene, elec. field modulation  
of)

IT Electrooptical effect  
(in anthracene, **fluorescence** modulation in relation to)

IT **Fluorescence**  
(of anthracene singlet excitons, elec. field modulation of)

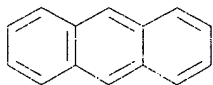
IT 120-12-7, properties  
RL: PRP (Properties)  
(**fluorescence** of singlet excitons in, elec. field  
modulation of)

L108 ANSWER 37 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1972:7904 Document No. 76:7904 Paramagnetic excitons and their role in  
photoconductivity and **fluorescence** of anthracene and  
tetracene. Frankevich, E. L. (Inst. Chem. Phys., Moscow, USSR).  
Discussions of the Faraday Society, No. 51, 37-47 (English) 1971.  
CODEN: DFSOAW. ISSN: 0366-9033.

IT 120-12-7, properties  
RL: USES (Uses)  
(photoionization in, triplet excitons in)

RN 120-12-7 HCAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)



CC 71 (Electric Phenomena)

ST paramagnetic exciton photocond **fluorescence**; photocond  
anthracene tetracene exciton; **fluorescence** anthracene  
tetracene exciton; anthracene photocond **fluorescence**  
exciton; tetracene photocond **fluorescence** exciton; exciton  
paramagnetic anthracene tetracene

IT **Fluorescence**  
Photoconductivity and Photoconduction  
(of organic fused-ring compds., in magnetic field, triplet excitons  
in relation to)

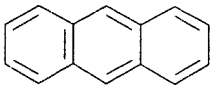
IT 92-24-0 120-12-7, properties  
RL: USES (Uses)  
(photoionization in, triplet excitons in)

L108 ANSWER 38 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1970:524950 Document No. 73:124950 Conversion of electrical energy  
into light. Mehl, Wolfgang; Funk, Burkhard (American Cyanamid Co.).  
U.S. US 3530325 19700922, 6 pp. (English). CODEN: USXXAM.  
APPLICATION: US 1967-662089 19670821.

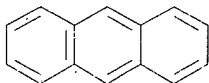
IT 120-12-7, uses and miscellaneous  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescent devices**)

RN 120-12-7 HCAPLUS

CN Anthracene (8CI, 9CI) (CA INDEX NAME)

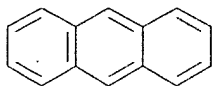


IC H01J  
INCL 313108000  
CC 71 (Electric Phenomena)  
ST **light emitting devices**; contacts arom  
org semiconductors; arom org semiconductors contacts; org  
semiconductors arom contacts; semiconductors arom org contacts;  
fused ring arom semiconductors  
IT **Electroluminescent devices**  
(anthracene)  
IT Sodium alloys, base  
(potassium-, **electroluminescent devices** from  
anthracene with **electrodes** of liquid)  
IT Potassium alloys, base  
(sodium-, **electroluminescent devices** from  
anthracene with **electrodes** of liquid)  
IT **120-12-7**, uses and miscellaneous  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescent devices**)  
IT 7440-57-5, uses and miscellaneous  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescent devices**, from anthracene  
and)  
  
L108 ANSWER 39 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1969:52078 Document No. 70:52078 Dependence of the  
**electroluminescence** and of the two-carrier injection current  
in anthracene on crystal thickness. Zschokke-Graenacher, Iris;  
Schadt, M.; Baldinger, Ernst (Univ. Basel, Basel, Switz.). Proc.  
Int. Conf. Lumin., Meeting Date 1966, Volume 2, 1915-18. Editor(s):  
Szigeti, G. Akad. Kiado: Budapest, Hung. (English) 1968. CODEN:  
20LDAU.  
IT **120-12-7**, properties  
RL: PRP (Properties)  
(elec. current-potential relations in **luminescent**, with  
double injection)  
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)

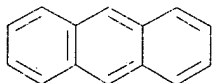


CC 71 (Electric Phenomena)  
ST **electroluminescence** anthracene; **luminescence**  
anthracene; anthracene **luminescence**; injection current  
anthracene  
IT **Luminescence**  
(**electro**-, in anthracene under double injection)  
IT **120-12-7**, properties  
RL: PRP (Properties)  
(elec. current-potential relations in **luminescent**, with  
double injection)  
  
L108 ANSWER 40 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1968:447404 Document No. 69:47404 **Electroluminescent** process  
including **injection** of negative **charge carriers**  
into a crystal of an organic compound. Mehl, Wolfgang (American  
Cyanamid Co.). U.S. US 3382394 19680507, 4 pp. (English). CODEN:  
USXXAM. APPLICATION: US 1965-442325 19650324.  
IT **120-12-7**, uses and miscellaneous  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescent devices** from, with  
injection of neg. carriers from lithium-containing ethylenediamine)

RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



INCL 313108000  
CC 71 (Electric Phenomena)  
ST **electroluminescence** anthracene; anthracene  
**electroluminescence**; **luminescence** anthracene;  
**charge carriers injection** anthracene; carriers  
**charge injection** anthracene; **injection**  
**charge carriers** anthracene  
IT **Electroluminescent devices**  
(anthracene with system for injection of neg. and pos. carriers  
as)  
IT **Light**  
(**emission** of, from anthracene, system for injection of  
neg. and pos. carriers for)  
IT 7439-93-2, uses and miscellaneous  
RL: USES (Uses)  
(**electroluminescent devices** from anthracene  
with injection of neg. carriers from ethylenediamine containing)  
IT 107-15-3, uses and miscellaneous  
RL: USES (Uses)  
(**electroluminescent devices** from anthracene  
with injection of neg. carriers from lithium-containing)  
IT 120-12-7, uses and miscellaneous  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescent devices** from, with  
injection of neg. carriers from lithium-containing ethylenediamine)  
L108 ANSWER 41 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
1967:50174 Document No. 66:50174 Photogeneration of charge carriers in  
anthracene. Geacintov, Nicholas; Pope, Martin (New York Univ., New  
York, NY, USA). Journal of Chemical Physics, 45(10), 3884-5  
(English) 1966. CODEN: JCPSA6. ISSN: 0021-9606.  
IT 120-12-7, properties  
RL: PRP (Properties)  
(photocond. of)  
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



CC 71 (Electric Phenomena)  
IT **Holes**  
(**injection** of, in anthracene, photocond. and)  
IT 120-12-7, properties  
RL: PRP (Properties)  
(photocond. of)

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